



## **Cycle 1 2021 Funding Cycle**

**PCORI Funding Announcements:  
Addressing Disparities; Assessment of Prevention,  
Diagnosis, and Treatment Options; Communication and  
Dissemination Research; and Improving Healthcare  
Systems**

Published January 5, 2021

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This PCORI Funding Announcement (PFA) applies to the funding cycle that closes May 4, 2021, at 5 pm ET. Submission Instructions, templates, and other resources are available at <https://www.pcori.org/funding-opportunities/announcement/broad-pcori-funding-announcements-cycle-1-2021>.



## **About PCORI**

The Patient-Centered Outcomes Research Institute (PCORI) was authorized by Congress in 2010 as a nonprofit, nongovernmental organization. PCORI's purpose, as defined by our authorizing legislation, is to help patients, caregivers, clinicians, policy makers, and other healthcare system stakeholders make better-informed health decisions by "advancing the quality and relevance of evidence about how to prevent, diagnose, treat, monitor, and manage diseases, disorders, and other health conditions" and by promoting the dissemination and uptake of this evidence.

PCORI is committed to transparency and a rigorous stakeholder-driven process that emphasizes patient engagement. PCORI uses a variety of forums and public comment periods to obtain public input to enhance its work. PCORI helps people make informed healthcare decisions and improves healthcare delivery and outcomes by producing and promoting high-integrity, evidence-based information that comes from research guided by patients and other stakeholders.

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Key Dates	<p>Online System Opens: January 5, 2021</p> <p>Town Hall: <a href="#">January 21, 2021, 12 pm ET</a></p> <p>Letter of Intent (LOI) Deadline: February 2, 2021, by 5 pm (ET)</p> <p>LOI Status Notification: March 2, 2021</p> <p>Application Deadline: May 4, 2021, by 5 pm (ET)</p> <p>Merit Review: July 2021</p> <p>Awards Announced: November 2021</p> <p>Earliest Project Start Date: March 2022</p>
Maximum Project Budget (Direct Costs)	<ul style="list-style-type: none"> <li>• Addressing Disparities; Assessment of Prevention, Diagnosis, and Treatment Options; Improving Healthcare Systems:             <ul style="list-style-type: none"> <li>○ \$3 million for small studies;</li> <li>○ \$5 million for large studies</li> </ul> </li> <li>• Communication and Dissemination Research: \$2 million</li> <li>• Special Area of Emphasis (SAE) topics: Up to \$10 million (Note: Budgets greater than \$5M apply to <b>SAEs only</b> and must be requested and approved at the LOI stage. Applicants must provide adequate justification in the LOI template).</li> </ul> <p>Applications that request budgets more than \$5 million in direct costs and do not align with the SAE, as outlined in the PFA, will be deemed administratively non-compliant and will not be reviewed. At the time of contract execution, PCORI sets aside all the funds associated with an awarded project to be made available throughout the contract's period of performance. The maximum budget includes all research- and peer-review-related costs. This PFA does not consider exceptions to the budget. PCORI will not review submissions exceeding the stated maximum budget.</p>
Maximum Research Project Period	<ul style="list-style-type: none"> <li>• Addressing Disparities; Assessment of Prevention, Diagnosis, and Treatment Options; Improving Healthcare Systems:             <ul style="list-style-type: none"> <li>○ 3 years for small studies;</li> <li>○ 5 years for large studies</li> </ul> </li> <li>• Communication and Dissemination Research: 3 years</li> <li>• SAE topics: 5 years</li> </ul> <p>This PFA does not consider exceptions to period-of-performance limits. PCORI will not review submissions exceeding the stated period of performance.</p>
Funds Available Up To	<p>Addressing Disparities: \$16M; Assessment of Prevention, Diagnosis, and Treatment Options: \$32M; Communication and Dissemination Research: \$8M; Improving Healthcare Systems: \$16M</p>
Review Criteria	<ol style="list-style-type: none"> <li>1. Potential for the study to fill critical gaps in evidence</li> <li>2. Potential for the study findings to be adopted into clinical practice and improve delivery of care</li> <li>3. Scientific merit (research design, analysis, and outcomes)</li> <li>4. Investigator(s) and environment</li> <li>5. Patient-centeredness</li> <li>6. Patient and stakeholder engagement</li> </ol>
Contact Us	<p><b>Programmatic Inquires:</b> <a href="mailto:sciencequestions@pcori.org">sciencequestions@pcori.org</a>, phone (202-627-1884), or online (<a href="http://www.pcori.org/PFA/inquiry">http://www.pcori.org/PFA/inquiry</a>).</p> <p><b>Administrative, Financial, or Technical Inquiries:</b> <a href="mailto:pfa@pcori.org">pfa@pcori.org</a> or phone (202-627-1885).</p> <p>PCORI will respond within two business days. However, we cannot guarantee that all questions will be addressed two business days prior to a LOI or application deadline. Applicants must plan accordingly; it is the applicant's responsibility to submit on time.</p>



## **New or Revised for the Cycle 1 2021 Funding Cycle:**

### **Standing 2021 Broad PFA**

Starting with Cycle 1 2021, PCORI will post all submission materials for the Broad and Methods PFAs and open PCORI Online for the Letter of Intent (LOI) phase of application submission at the start of the Cycle Year (i.e. Cycles 1-3 of any given year). In addition to the PFAs, the Submission Instructions, applicant templates and resources, and cycle deadlines will also be posted on PCORI's website and available in PCORI Online. Applicants may submit an LOI for any of the available cycles up until the LOI deadline for that cycle. PCORI will strive to make only necessary administrative updates to the Submission Instructions and applicant templates throughout the Cycle Year.

To maintain responsiveness to health research needs and stakeholder interests, PCORI may revise the details of a priority area, address policy changes, and add or remove Special Areas of Emphasis (SAEs) in a PFA. SAEs aim to encourage applications on a particular healthcare topic—not to restrict applications to only the SAEs. SAEs may include dedicated funds.

Announcement of any updates and any revised documents will be posted on PCORI's website no later than four weeks before each cycle's LOI deadline. PCORI will also clearly indicate on the PFA webpage if no changes have been made since the Cycle 1 posting.

### **Piloting a Process for Application Deferrals**

Starting with Cycle 1 2021, PCORI will pilot a new application submission deferral process *for the Broad and Methods PFAs only*. Deferrals will be available to applicants who submitted an LOI to the Broad or Methods PFAs and were invited to submit a full application. Applicants will be limited to two sequential deferrals, which may cross Cycle Years (e.g., an applicant who is invited to submit a full application for Cycle 2 may defer submission to Cycle 3, and then may potentially again request a deferral to Cycle 1 2022).

To request a deferral, the Principal Investigator (PI) must email [pfa@pcori.org](mailto:pfa@pcori.org) prior to the application deadline, copying the institutional Administrative Official (AO). For a request to be granted, the deferral request must be submitted before the application deadline and the AO must be included in the request email. As noted above, applicants will be limited to two deferrals. Applicants will be notified of the status of their request within one business day of its receipt.

Under this pilot program, applicants will not need to re-upload their LOI or re-complete application fields for the next cycle to which they deferred within PCORI Online. Deferral requests received after the application deadline will be rejected and applicants will be encouraged to submit a new LOI for the next posted cycle.

Applicants proposing projects that fall under an SAE for a particular cycle should note that if they elect to defer their application submission to a later cycle, the SAEs might change (as stated above). However, for the Broad PFA, any changes to SAEs would not affect application responsiveness determinations.

### **Specific Changes to the Cycle 1 2021 Broad PFA:**

- Added Special Area of Emphasis (SAE) related to COVID-19. No changes were made to the Maternal Morbidity and Mortality and Intellectual and/or Developmental Disabilities SAEs.



- Consistent with PCORI’s reauthorization legislation of 2019, applicants may propose research that captures, as appropriate, the potential burdens and economic impacts of interventions studied in a proposed CER. See more information in the [Cost Effectiveness and Cost section](#).
- Addressing Disparities:
  - Applicants may propose to compare interventions that have documented efficacy or effectiveness in similar situations with some adaptation if necessary—if the efficacy is well documented in the general population and based on a sufficiently strong rationale for why the intervention would be expected to be efficacious in the proposed new setting(s) and/or population(s). PCORI expects most of the proposed time and budget of the proposed study aim at assessing comparative effectiveness rather than adapting and validating the adapted interventions.
- Assessment of Prevention, Diagnosis, and Treatment Options: No changes since Cycle 3 2020
- Communication and Dissemination Research:
  - Refined areas of interest with the focus on comparing communication strategies, dissemination strategies, or implementation strategies for overcoming barriers to adoption, adaptation, integration into routine clinical care, and sustainability of evidence-based interventions. Of additional interest is the comparison of strategies for stopping or halting practices that have not been proven to be effective and are possibly harmful (also known as de-implementation).
- Improving Healthcare Systems: No changes since Cycle 3 2020

See the Broad Submission Instructions for updates to the templates and other requirements.

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## I. Introduction

The Patient-Centered Outcomes Research Institute (PCORI) funds patient-centered outcomes research (PCOR), a type of comparative clinical effectiveness research (CER) that focuses on outcomes that matter to patients, their caregivers, and their families. PCORI-funded studies must include the perspectives of patients and other healthcare stakeholders.

PCORI seeks to fund CER studies that compare two or more alternatives for addressing prevention, diagnosis, treatment, or management of a disease or symptom; improving healthcare system-level approaches to managing care; communicating or disseminating research results to patients, caregivers, or clinicians; or eliminating health or healthcare disparities. To be considered responsive, applications must describe research that compares at least two alternative approaches for the following:

- Prevention, diagnosis, treatment, or management of a disease or symptom
- Improving access to high-quality, equitable, and efficient care through healthcare system-level interventions
- Communicating or disseminating research results to patients, caregivers, or clinicians
- Reducing or eliminating disparities in patient-centered outcomes (PCOs), including health, health care, and patient-reported outcomes

PCORI is seeking applications designed to provide information that can inform critical decisions facing patients and caregivers, clinicians, policy makers, and healthcare system leaders. These decisions must be consequential and occurring now, in the absence of sound evidence about the comparative effectiveness of alternative approaches. There must be substantial potential for patients and caregivers to benefit from the new knowledge in ways that are important to them. The premise of the research should be that the new knowledge will inform critical choices of patients and stakeholders in health care. This knowledge should offer insight about the comparative benefits and harms of the options and should provide information on outcomes that are important to patients.

The public entrusts PCORI to fund research that matters to patients, their caregivers, and other stakeholders (defined as clinicians and clinician societies, hospitals and health systems, payers [insurance], purchasers [business], industry, researchers, policy makers, and training institutions). By emphasizing the role of diverse research teams that include varying perspectives, PCORI seeks to change the way in which research is conducted. PCORI distinguishes itself by supporting research in which patients, caregivers, practicing clinicians, and the broader stakeholder community are actively engaged in generating research questions, reviewing research applications, conducting research, disseminating research findings, promoting the implementation of research findings, and using the results to understand and address patient and other stakeholder needs.

This Broad PCORI Funding Announcement (PFA) seeks investigator-initiated applications for patient-centered CER projects aligned with one of our five priority areas for research. This PFA covers the following four priority areas: Addressing Disparities; Assessment of Prevention, Diagnosis, and Treatment Options; Communication and Dissemination Research; and Improving Healthcare Systems.

## II. Special Areas of Emphasis: Intellectual and/or Developmental Disabilities, Maternal Mortality, and COVID-19

As part of PCORI's reauthorization in December 2019, Congress included two new research priority areas: Maternal Mortality and Individuals with Intellectual and/or Developmental Disabilities (IDD). Starting in Cycle 3 2020, PCORI has allotted up to \$30 million for each of these topics.

Additionally, in continuing to respond to the ongoing COVID-19 pandemic, PCORI has developed a Special Area of Emphasis (SAE) to support innovative, high-impact studies that fit clearly within our core mission of patient-engaged and patient-centered comparative clinical effectiveness research.

The goal of calling out the three above SAEs is to encourage submissions to these priority areas, not to limit submissions to these topics only.

### Improving Care for Individuals with IDD Growing into Adulthood

As part of PCORI's strategic approach for responding to its congressionally mandated research priority addressing intellectual and/or developmental disabilities, this initiative is the first of several funding initiatives related to this topic. PCORI has allotted up to \$30 million for this SAE. Developmental disabilities are chronic disabilities that originate at birth or in the developmental period and cause impairment in physical, learning, language, and/or behavioral areas. Intellectual disabilities, which fall under the umbrella term of *developmental disabilities*, involve limitations to cognitive function (reasoning, learning, problem solving) and adaptive behavior. Not all developmental disabilities include limitations in cognitive ability.

Adolescents with IDD often have special healthcare needs (SHCN). The healthcare transition from pediatric to adult providers is a critical time for adolescents with SHCN, as they move from a child- to an adult-oriented healthcare setting with fewer systems supports, including care planning and care coordination. Compared with other patients with SHCN, individuals with IDD are less likely to report adequate support of their transition, less likely to be encouraged to direct their own care or receive the supports needed to do so, and more likely to incompletely transition to adult care. Incomplete transitions are associated with subsequent decreased receipt of routine care, tests, and vaccinations, and increased unmet physical and mental health and prescription needs. Important barriers to a successful transition include inadequate transition planning, the substantial drop off in services offered once people reach age 21, and insufficient adult providers who are able and willing to treat individuals with IDD. Research has shown that racial and ethnic minority individuals with IDD are subject to even greater health disparities compared with their nondisabled peers. Although evidence-based interventions to support transitional care are in use for other populations and conditions, research is needed to determine which care models, including coordination and other components, and wrap-around services are optimal for individuals with IDD.

PCORI invites applications for comparative effectiveness research of models of care or components of such models to support the healthcare transition from childhood to adulthood and the continuation of patient-centered primary and specialty health care for individuals with IDD.

Models of care may include, but are not limited to, the following: transition clinics, co-located pediatric



and adult care providers (i.e., pediatric and adult practices in the same building), and adult IDD care clinics. Care components may include person-centered transition planning; patient, family, caregiver, and provider support, including technology interventions that address access to and continuation of general and specialty adult care; wrap-around service support; and care coordination.

Approaches and interventions should be evidence based and/or in common use among those with IDD or other childhood-onset diseases (e.g., congenital heart disease, diabetes). Applicability of this evidence to those with IDD must be explained and justified. While PCORI encourages the comparison of active interventions, use of “usual care” or “standard of care” may be an appropriate comparator but must be justified, well defined, and sufficiently measured.

Outcomes may include, but are not limited to, the following: health outcomes including physical and mental health and health-related quality of life, process measures such as healthcare utilization and continuation of care, and satisfaction with the transition process and care (from the perspective of patients, caregivers, and providers). Additional outcomes may include valid indicators or measures of a successful transition.

Given the heterogeneity of individuals living with IDD, research should capture details regarding the severity of impairment, living circumstances, and/or existing support of study participants to contextualize findings and tailor adoption of useful results. PCORI is interested in studies that include individuals with IDD from communities that may experience compounded disparities (e.g., Black, Latinx, LGBTQ, rural, low income).

### **Increasing Access to and Continuity of Patient-Centered Maternal Care**

As part of PCORI’s strategic approach for responding to its congressionally mandated research priority addressing maternal mortality and morbidity, this initiative is the first of several funding initiatives related to this topic. PCORI has allotted up to \$30 million for this SAE.

Approximately 700 women die in the United States each year due to pregnancy-related causes, and nearly 60 percent of deaths are preventable. Severe maternal morbidity, unintended consequences of pregnancy that result in significant short- or long-term consequences to a woman’s health, is 100 times more common than maternal mortality. Significant disparities in maternal morbidity and mortality for Black and Native American/Alaska Native women, as well as for women residing in rural areas, persist and may reflect disparities in access to patient-centered perinatal care; insufficient coordination and continuity in care; lack of patient trust in the healthcare system, leading to low patient engagement and attendance in care; inadequate patient awareness of warning signs; and inadequate provider detection of warning signs. Strategies to increase access to maternity care for the general population need to be adapted to address specific barriers faced by populations experiencing the worst disparities.

PCORI seeks to fund studies that compare the effectiveness of multilevel, culturally adapted interventions that address barriers in access to and continuity of optimal patient-centered maternal care. This SAE topic focuses on interventions targeting pregnant women from populations that experience significant disparities in outcomes: Black, Native American/Alaska Native, and/or rural.

Approaches and interventions should be evidence based and/or in common use. PCORI is interested in multilevel interventions that compare varying levels of intensity for at least one of the following

categories:

- **Maternal care coordination** such as culturally appropriate strategies for connecting pregnant women to treatment services, to improve continuity of care prenatally and during transition from pregnancy to postpartum, management of comorbidities and preexisting conditions that affect pregnancy outcomes (e.g., obesity, diabetes, cardiovascular disease), and access to mental health or other specialty care.
- **Education or training for the following:**
  - Healthcare providers (e.g., Ob/Gyns, family practice physicians, certified nurse midwives, community health workers), to increase cultural competence and communication with patients, decrease racial or cultural bias and discrimination, and/or improve knowledge and follow-up of patient risk factors and warning signs for adverse outcomes
  - Patients, using culturally adapted resources to promote health literacy and improve knowledge about maternal risk factors and warning signs for adverse outcomes
- **Add-on or wrap-around services** such as transportation, childcare, housing vouchers, nonmedical support (e.g., doulas, patient navigators, peer support), or case management

Randomized controlled trials, adaptive studies, stepped wedge studies, well-designed observational studies, and other rigorous designs are encouraged to compare outcomes for varying intensities of interventions or combinations of interventions.

Studies must include strong community linkages to increase access to and continuity of optimal patient-centered perinatal care (e.g., integration of community-based practices into care, partnerships between health systems and community-based practices, referral with active follow-up to community-based resources).

Studies must measure appropriate maternal outcomes at least up to one year postpartum. They may also include infant clinical and patient-centered outcomes. Where established core outcomes exist, they should be included among the list of outcomes:

- *Maternal outcomes of interest (note, this is not an exhaustive list):* Morbidity, including condition-specific outcomes; mortality; labor characteristics (e.g., preterm labor, induction of labor, use of analgesia/anesthesia); adherence to guidelines-based care; experience with care; respectful care; satisfaction with care; engagement with care; patient activation; healthcare utilization; quality of care; perinatal depression

The following outcomes may also be included when appropriate:

- *Infant outcomes:* Gestational age at birth, birthweight, stillbirth/neonatal mortality, neonatal morbidity
- *Provider outcomes:* Bias, knowledge, satisfaction, response to warning signs

**Awardee collaboration:** PCORI will expect collaboration among funded project teams if more than one project is funded, including, but not limited to, harmonization of outcomes and measures; analysis plans, when appropriate; and troubleshooting recruitment and retention challenges. Thus, PCORI requires a statement from investigators regarding willingness to collaborate.

## Improving Outcomes and Mitigating Health Effects of COVID-19

While the future trajectory of COVID-19 is uncertain, there are likely to be many critical unanswered questions about the comparative effectiveness of strategies to lessen the impact of longer-term sequelae, improve access to vaccines, and mitigate the impact on those disproportionately impacted by the COVID-19 pandemic. This SAE focuses on research that can inform critical choices among clinical and policy options that patients, healthcare providers, health systems, policy makers, and other stakeholders will need to make that relate to COVID-19 in a post-pandemic world. The objectives of this SAE are to (1) strengthen the understanding of different approaches to mitigate the longer-term impacts and complications of COVID-19 on individuals, communities, healthcare providers, and healthcare systems; and (2) provide evidence to inform clinical and public health responses, decision making, and planning.

For all of the priority areas below, social determinants of health, as well as disparities in COVID-19 risks and health outcomes, should be considered an important aspect of interventions and/or analyses. The priority areas are as follows:

- *Management and survivorship of post-acute COVID-19:* What are effective interventions for improving the outcomes of those experiencing longer-term complications from COVID-19, including neurological, cardiovascular, respiratory, immunological, and rheumatological complications? What are effective strategies for managing chronic conditions in conjunction with these longer-term COVID-19 complications, including diabetes, hypertension, kidney disease, or ischemic heart disease? Are there management strategies of the acute disease related to the prevention (or exacerbation) of the long-term consequences?
- *Impact of COVID-19 on disproportionately affected populations:* What are effective public health strategies and clinical pathways to improve longer-term outcomes for vulnerable and/or marginalized populations? What are effective system- or organizational-level responses to prevent or mitigate the impact of COVID-19 in low-income and low-resource settings that serve these populations, such as improving access to vaccines? Disproportionately affected populations include, but are not limited to, Native Americans or Alaska Natives, African Americans, and other racial, ethnic, or sexual and gender minorities; rural communities; incarcerated populations; people with substance abuse disorders; people who are homeless or unstably housed; individuals with intellectual, developmental, or physical disabilities; individuals with chronic conditions; low-income women who are pregnant; and individuals facing increased risk of exposure to COVID-19 because they are unable to work remotely.
- *Impact of COVID-19-related social isolation and loneliness on health outcomes:* What are effective interventions and mitigation strategies to address the longer-term effects of COVID-19-related social isolation and loneliness on health outcomes? Interventions and mitigation strategies include, but are not limited to, befriending schemes, individual and group therapies, various shared activity programs, and strategies using information and communication technologies. What strategies can maintain and build on the gains achieved using these technologies?
  - Studies examining specific features of interventions (e.g., self-directed or supported, type of support needed, relative intensity of support needed for different populations/health

conditions) are of interest. Studies tailoring these features to improve outcomes for disproportionately affected populations, as well as pediatric populations, are also of interest.

The research questions articulated in each of the priority areas above are not the only questions of interest; other relevant questions within these priority areas will also be considered.

### **Study Design Considerations**

PCORI encourages the use of diverse study designs to answer research questions. These include multi-arm/multistage and other adaptive designs, as well as natural experiments. Hybrid designs, which can provide insight into implementation approaches in the context of evidence generation, will also be considered.

Given this SAE's focus on longer-term impacts of COVID-19, PCORI recognizes the importance of including data that would allow for the conduct of retrospective analyses and/or the inclusion of baseline data from 2020 (and earlier). Applications that include such data and proposed analyses will also be considered.

In considering the timeline and scope of their proposed study, applicants should consider the importance of generating timely information of relevance for addressing the pandemic. PCORI encourages applications that can generate preliminary results/outcomes early in the conduct of the proposed study.

PCORI also encourages applicants to consider the inclusion of relevant core outcome sets (COS). There are efforts to develop COS specific to COVID-19.<sup>1</sup> The inclusion of COS facilitates evidence synthesis and helps ensure that COVID-19 studies address the impacts of disease and treatment that are meaningful and of high priority to people affected or at risk of COVID-19, and those involved in their care.

### **Maximum Project Budget: Up to \$10 Million (Direct Costs) for SAE Applications**

PCORI recognizes that SAE applications (IDD, Maternal Morbidity/Mortality, and COVID-19 topics) may require a larger budget to adequately answer the research question due to the size and scope of the proposed study. As such, PCORI will consider budget requests up to \$10 million in direct costs only for submissions germane to the above SAE. The request for budgets will be reviewed and either approved or denied by PCORI staff at the Letter of Intent (LOI) stage.

Applicants that request a budget exceeding \$5 million in direct costs must provide an adequate justification in the LOI Template describing how any additional funds will be used and documenting the budget requirements with respect to the scope, data collection, and analysis efforts of the proposed research. These awards are not to exceed the maximum research project period of five years for this PFA. Applications with a budget that exceeds \$5 million in direct costs without prior approval from PCORI during the LOI feedback stage will be deemed administratively noncompliant and will not be reviewed.

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<sup>1</sup> See <http://www.cometinitiative.org/Studies/Details/1538>.

### III. General Requirements for PCORI Research

This section includes language that is specific to PCORI’s requirements for programmatic responsiveness under this funding announcement. Applicants should use this section as guidance when preparing their applications. For information related to administrative and technical requirements for LOI and application submission, please consult the PCORI [Submission Instructions](#).

#### Research Priorities

To be considered responsive, applications must:

- *Describe comparators.* Regardless of the approach being studied, all proposed research projects must compare at least two alternatives. If the applicant proposes “usual care” as a rational and important comparator in the proposed study, then it must be described in detail, coherent as a clinical alternative, and properly justified as a legitimate comparator (e.g., “usual care” is guidelines-based). It must also be accompanied by an explanation of how the care given in the “usual care” group will be measured in each patient, and how appropriate inferences will be drawn from its inclusion. “Usual care” must be described as mentioned above to ensure that it accounts for geographic and temporal variations, and it has wide interpretability, applicability, and reproducibility.
- *Describe research that compares two or more alternatives, each of which has established efficacy.* PCORI expects the efficacy or effectiveness of each intervention to be known. If the efficacy or evidence base is insufficient, then data need to be provided to document that the intervention is used widely. The application must provide information about the efficacy of the interventions that will be compared; pilot data might be appropriate. Projects aiming to develop new interventions that lack evidence of efficacy or effectiveness will be considered out of scope.
- *Describe research that studies the benefits and harms of interventions and strategies delivered in real-world settings.* PCORI is interested in studies that provide practical information that can help patients and other stakeholders make informed decisions about their health care and health outcomes.
- *Describe consultation with patients and other stakeholders about how the study is answering a critical question.* Explain the pertinent evidence gaps and why the project questions represent decisional dilemmas for patients, caregivers, clinicians, policy makers, and other healthcare system stakeholders. Describe why project outcomes are especially relevant and meaningful endpoints to patients and other stakeholders.

#### Categories of Non-responsiveness

PCORI discourages proposals in the following categories, and will deem them nonresponsive:

- Instrument development, such as new surveys, scales, etc.
- Developing, testing, and validating new decision aids and tools, or clinical prognostication tools
- Pilot studies intended to inform larger efforts

- Comparing patient characteristics rather than clinical strategy options
- For Assessment of Prevention, Diagnosis, and Treatment Options, Improving Healthcare Systems, and Communication and Dissemination Research applicants ONLY: Comparing interventions for which the primary focus is the role of community health workers or patient navigators

Consistent with PCORI's authorizing law,<sup>2</sup> PCORI does not fund research whose findings will include:

- Coverage recommendations
- Payment or policy recommendations
- Creation of clinical practice guidelines or clinical pathways
- Establishment of efficacy for a new clinical strategy
- Pharmacodynamics
- Study of the natural history of disease
- Basic science or the study of biological mechanisms

### Cost Effectiveness and Cost

PCORI's authorizing law was amended by reauthorization legislation<sup>3</sup> in 2019 to include a new mandate to consider, as appropriate, the full range of clinical and patient-centered outcomes data relevant to patients and stakeholders. The reauthorizing language clarifies that in addition to the relevant health outcomes and clinical effectiveness, relevant outcomes may include the potential burdens and economic impacts of the utilization of medical treatments, items, and services.

As such, where PCORI previously directed in its past Funding Announcements that proposed studies could not employ direct measurements of cost, PCORI now allows and encourages proposed studies that include collection of data describing these potential burdens and economic impacts when relevant to patients and caregivers or to other stakeholders, as further described below and in the accompanying FAQs. PCORI's intention is that PCORI-funded research captures such burdens and economic impacts to provide the full range of outcomes data relevant to decision makers.

Specifically, applications responding to this PFA may:

- Include data collection on burdens or economic impacts associated with interventions, that are relevant to patients, caregivers, and other stakeholders. PCORI-funded studies have often included impacts on healthcare utilization; data that capture costs of these impacts will now be considered responsive.
- Include data collection on burdens and economic impacts relevant to other stakeholders, such as medical out-of-pocket costs, time costs, other costs patients or caregivers incur in the course of seeking care (i.e., for childcare or transportation), or productivity costs.

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<sup>2</sup> Available at [http://www.pcori.org/sites/default/files/PCORI\\_Authorizing\\_Legislation.pdf/](http://www.pcori.org/sites/default/files/PCORI_Authorizing_Legislation.pdf/).

<sup>3</sup> Further Consolidated Appropriations Act of 2020; Pub. L. No. 116-94 (2019), H.R. 1865.



However, proposed research may not measure economic impacts as the primary outcome of a proposed study. Proposals that have economic measures as the primary outcome will be considered non-responsive.

Further, consistent with past Funding Announcements, PCORI will consider an application nonresponsive if the proposed research:

- Conducts a formal cost-effectiveness analysis of alternative approaches to providing care.
- Directly compares the costs of care between two or more alternative approaches to providing care, or relies on modeling to develop estimates of “total costs of care” designed to enable such comparisons.

For further information, please reference our [cost-effectiveness analysis FAQs](#).

PCORI has a continued interest in studies addressing questions about conditions that lead to high costs to individuals or society. This interest is reflected in our review criterion on the condition’s impact on the health of individuals and populations. Thus, as addressed in the FAQs, PCORI is interested in studies that:

- Examine the effect of costs on patients, such as patients’ out-of-pocket costs, hardship, or lost opportunity, or costs as a determinant of or barrier to access to care
- Address cost-related issues, such as the resources needed to replicate or disseminate a successful intervention
- Evaluate interventions to reduce health system waste or increase health system efficiency

In Fall 2020, PCORI proposed draft principles that will serve as a point of reference for providing guidance to potential applicants on what is included in “the full range of clinical and patient-centered outcomes relevant to, and that meet the needs of, patients, clinicians, purchasers, and policy makers,” consistent with PCORI’s authorizing law. The [draft principles](#) will be finalized following review of robust stakeholder input PCORI received during a 60-day public comment period that ended November 13, 2020. These draft principles will inform both PCORI’s expectations for applicants and the corresponding review evaluation of applications submitted in response to this PFA. Final principles and guidance are expected to be available in Spring 2021.

### **Coverage of Intervention Costs**

In general, PCORI will not cover costs for study interventions that constitute the procedures, treatments, interventions, or other standard clinical care (“patient care”) that are being proposed for comparison in the research project (“patient care costs”).

### **Avoiding Redundancy**

PCORI encourages potential applicants to review funded research at [pcori.org](http://pcori.org). We intend to balance our funded portfolio to achieve synergy and avoid redundancy where possible.

### **Methodological Considerations**

The [PCORI Methodology Standards](#) represent minimal requirements for the design, conduct, analysis,



and reporting of scientifically valid, patient-centered outcomes research. Regardless of study design, applications must adhere to all relevant PCORI Methodology Standards, and all deviations need to be justified. Applicants should address additional best practices—including relevant guidelines for conducting clinical trials developed by other organizations—in the application for PCORI funding.

### Patient-Centered Outcome Measures

PCORI encourages investigators to design their research using validated outcome measures. Include preliminary data that support using the proposed measures in the study population. We encourage investigators to consider those measures described in the [Patient-Reported Outcomes Measurement Information System<sup>4</sup>](#) (PROMIS). Likewise, PCORI encourages the use of core outcome sets, such as those developed by the Core Outcomes Measures in Effectiveness Trials Initiative to facilitate cross-study analysis. See <http://www.comet-initiative.org/>.

### Leveraging Existing Resources, Including PCORnet

PCORI is interested in new research that derives data from a wide variety of sources and that uses study designs appropriate for the goals of the proposed project. PCORI encourages investigators to propose studies that leverage existing resources, such as adding Patient-Centered Outcomes Research (PCOR) to an existing large clinical trial or analyzing existing large databases that contain valuable, relevant information that may be used to answer important CER questions. Another possible resource is established patient outcomes registries, especially when such registries can be linked to electronic medical record (EMR) data from healthcare delivery systems or administrative claims data from public or commercial insurers. In circumstances where randomized control trials are not practical or ethically acceptable, studies leveraging established patient outcomes registries can have meaningful and complementary roles in evaluating patient outcomes. PCORI does not intend for this PFA to support the development of new data networks or patient registries, but rather to support the effective utilization of existing data resources for proposed new CER studies.

For some proposed projects, the data resources of PCORnet<sup>®</sup>, the National Patient-Centered Clinical Research Network, may be particularly appropriate. Over the last seven years, PCORI has made a major commitment to create the infrastructure of PCORnet, which was designed to improve the nation's capacity to conduct efficient large-scale clinical research and to learn from the healthcare experiences of millions of Americans. This large clinical research network represents patients, clinicians, health systems, and health plans across the country and supports research that will improve health care and health outcomes. The network currently includes nine Clinical Research Networks (CRNs), representing more than 60 health systems, two Health Pan Research Networks (HPRNs) and a Coordinating Center. PCORnet Networks provide access to large longitudinal datasets that enhance the capture of relevant outcomes and provide more detail on specific procedures or treatments, disease severity, and the presence of comorbid illness.

The following elements are central to the rationale for PCORnet:

- Preexisting, standardized, curated, and research-ready clinical data on large numbers of persons

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<sup>4</sup> Available at <http://www.nihpromis.org/>.

with specific clinical conditions and illnesses;

- Actively engaged patients who join in governing the research uses of these data;
- Distributed (rather than centralized) data platforms that maximize the security and local control of all data;
- A readiness among network members to collaborate and a willingness to share data in pursuit of worthy research aims; and
- The capacity to link data across data sources at the individual patient level.

Applicants are encouraged to consider whether using the PCORnet infrastructure might assist in one or more aspects of their proposed research study. Examples include, but are not limited to, the following:

- Background to the research question or feasibility of study
- Document the importance of the research question
- Estimating the size of the potentially eligible population
- Determining the range of current treatment practices and sequencing
- Assessing the duration of continuous treatment and care

### Studies in Rare Diseases

PCORI is interested in the investigation of strategies addressing care for patients with rare diseases. These conditions are defined as “life-threatening” or “chronically debilitating.” They are of such low prevalence (affecting fewer than 200,000 in the U.S. [i.e., less than 1 in 1,500 persons]) that special efforts—such as combining data across large populations—might be needed to address them.

### Patient and Stakeholder Engagement

In PCORI-funded research, patients and other healthcare stakeholders are viewed as partners who leverage their lived experience and/or professional expertise to influence research to be more patient centered, relevant, and useful. When developing an engagement strategy, PCORI encourages applicants to consider the time and resources needed to identify, confirm, and prepare stakeholders for collaborating; the infrastructure needed to manage stakeholder engagement activities; and the specific decision points that will draw on the expertise of stakeholder partners. Research partners must include representatives of the populations most impacted by the condition or issue addressed by the study. Applicants’ use of multiple approaches that are along a continuum of engagement from input to shared leadership are allowable and encouraged.<sup>5</sup> For example, study teams may find it useful to solicit input from a large group of stakeholders using quick-turnaround methods (e.g., focus groups, surveys, crowdsourcing, virtual or in-person roundtables and community forums) in addition to engaging stakeholders via ongoing consultative groups (e.g., advisory committees, working groups), collaborative arrangements, and leadership positions (e.g., co-investigators, multidisciplinary steering committees)

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<sup>5</sup> Forsythe LP, Carman KL, Szydlowski V, et al. Patient engagement in research: early findings from the Patient-Centered Outcomes Research Institute. *Health Aff (Millwood)*. 2019;38:359-367. <https://doi.org/10.1377/hlthaff.2018.05067>

that are sustained over the course of the study.

For this PFA, applicants should provide an overview of their engagement approach that should include (1) a proposed list of patient and other healthcare research partners (include names and affiliations, if available), the perspectives they will represent, and justification for their inclusion; (2) the goals for working with stakeholders, which may include affecting the acceptability, feasibility, rigor, and/or relevance of the study; and (3) a description of how the team will collaborate with and/or gather input from stakeholders at key decision points throughout the study. Funded awardees are required to submit a more detailed [engagement plan](#) six months after contract execution.

### **Populations Studied and Recruited**

PCORI seeks to fund research that includes diverse populations with respect to age, gender, race, ethnicity, geography, or clinical status, so that possible differences in outcomes may be examined in defined subpopulations. PCORI recognizes that some proposed studies might represent important PCOR opportunities, even in the absence of a broadly diverse study population. However, the burden is on the applicant to justify the study's importance in the absence of diversity; to discuss which subgroups are most important; and to discuss how the subgroups will be analyzed, including whether or not the study will be powered to examine the question of effectiveness in subgroups.

PCORI is particularly interested in including previously understudied populations for whom effectiveness information is especially needed, such as hard-to-reach populations or patients with multiple conditions. Thus, comparisons should examine the impact of the strategies in various subpopulations, with attention to the possibility that the strategy's effects might differ across subpopulations. PCORI has developed the following list of populations of interest to guide our efforts in research and engagement. (Note that the Addressing Disparities Priority Area requires that proposed research focus on at least one of the groups indicated by an asterisk below.)

- Racial and ethnic minority groups\*
- Low-income groups\*
- Women
- Children (age 0–17 years)
- Older adults (age 65 years and older)
- Residents of rural areas\*
- Individuals with special healthcare needs, including individuals with disabilities\*
- Individuals with multiple chronic diseases
- Individuals with rare diseases
- Individuals whose genetic makeup affects their medical outcomes
- Patients with low health literacy, numeracy, or limited English proficiency\*
- Gender and sexual minorities\*

- Veterans and members of the Armed Forces and their families

Regardless of the population studied, investigators are expected to provide evidence-based estimates regarding the representativeness of the potential pool of participants from which recruitment will occur; the target sample size; and recruitment and retention rates, reflecting the study's inclusion and exclusion criteria as well as factors that may impact the final sample size (e.g., loss to follow-up).

### Protection of Human Subjects

PCORI follows the Federal Policy for the Protection of Human Subjects (45 CFR part 46), including the Common Rule. For more detailed information, please see Section 5, titled "Human Subjects Research Policy," in the [Supplemental Grant Application Instructions for All Competing Applications and Progress Reports](#),<sup>6</sup> which is issued by the U.S. Department of Health and Human Services (HHS). In referencing the HHS Supplemental Grant Application Instructions, note that PCORI does not require that applicants comply with sections of that policy that refer to requirements for federal-wide assurance and the inclusion of women, minorities, and children in the proposed studies. Instead, PCORI expects applicants to address diversity in study participants in the research plan, through a focus on subpopulations, as described in the above section on [Populations Studied and Recruited](#). Awardees must also comply with appropriate state, local, and institutional regulations and guidelines pertaining to the use of human subjects in research.

PCORI requires awardees to ensure that there is a Data and Safety Monitoring Plan, which may include the need to appoint a Data and Safety Monitoring Board, as provided in the [PCORI Policy on Data and Safety Monitoring Plans for PCORI-Funded Research](#).<sup>7</sup>

PCORI merit reviewers will examine plans for protection of human subjects in all applications and may provide comments regarding the plans (see [How To Evaluate Human Subjects Protections](#)<sup>8</sup>). Reviewers' comments on human subject research are not reflected in the overall application score, but PCORI staff might use them during potential funding negotiations. Final determinations about the adequacy of human subject protections rest with the Institutional Review Board or international equivalent that have jurisdiction for the study.

The Awardee Institution, whether domestic or foreign, bears ultimate responsibility for safeguarding the rights and welfare of human subjects in PCORI-supported activities.

### Required Education of Key Personnel on the Protection of Human Subject Participants

PCORI requires that all applicants adhere to the National Institutes of Health (NIH) policy on education in the protection of human subject participants in the conduct of research. This applies to all individuals listed as key personnel in the application. The policy and FAQs are available on the [NIH website](#).<sup>9</sup>

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<sup>6</sup> See <http://grants.nih.gov/sites/default/files/supplementalinstructions.docx>

<sup>7</sup> See <http://www.pcori.org/sites/default/files/PCORI-Policy-Data-Safety-Monitoring-Plans.pdf>

<sup>8</sup> See <http://www.pcori.org/sites/default/files/PCORI-Checklist-for-Evaluating-Human-Subjects-Protections.pdf/>.

<sup>9</sup> See <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-054.html>.

## IV. Addressing Disparities

PCORI invites applications for CER studies designed to evaluate and compare interventions that are intended to reduce or eliminate disparities in health and health care. Patients and other stakeholders often lack the appropriate evidence required to make the best choices about prevention, screening, diagnosis, monitoring, or treatment. Applications to the Addressing Disparities Priority Area should focus on overcoming barriers that may disproportionately affect health outcomes or on identifying best practices for reducing disparities in target populations (i.e., racial and ethnic minority groups; low-income groups; residents of rural areas; individuals with special healthcare needs, including individuals with disabilities; patients with low health literacy, numeracy, or limited English proficiency; and sexual and gender minorities persons).

### Background

The health disparities literature has largely been devoted to describing disparities, including identifying their potential sources and drivers. Previous research has identified pervasive disparities in access to high-quality health care and worse health outcomes for specific populations across multiple conditions and multiple settings. Outcomes are based on race or ethnicity, gender, geographic location, socioeconomic status, disability, and other factors. These disparities have been well documented. Thus, PCORI's Addressing Disparities Priority Area is seeking applications that compare evidence-based interventions to improve health outcomes and reduce disparities for target populations. (See [Addressing Disparities Targeted Populations](#).)

PCORI seeks to fund studies that yield evidence to help guide decisions about how to eliminate disparities in health and health care, as well as how to ensure that people receive care according to their needs and that they have the opportunity to achieve the best possible health outcomes. Interventions to reduce persistent disparities have been understudied and are multifactorial, complex, and context specific. Often, evidence-based interventions have been shown to be effective in the general population but lack evidence for effectiveness in those populations at risk for disparities. The Addressing Disparities Priority Area is interested in funding studies that tailor and test these types of interventions in these populations.

Applicants may propose to compare interventions that have documented efficacy or effectiveness in similar situations with some adaptation if necessary—if the efficacy is well documented in the general population (e.g., with prior research or with a systematic review) and based on a sufficiently strong rationale for why the intervention would be expected to be efficacious in the proposed new setting(s) and/or population(s). If an intervention is to be adapted, PCORI expects most of the proposed time and budget of the proposed study to aim at assessing comparative effectiveness rather than adapting and validating the adapted interventions.

### Research of Interest

PCORI's Addressing Disparities Priority Area seeks to fund investigator-initiated research that does the following:

- Compares evidence-based interventions to reduce or eliminate disparities in PCOs, including

health, health care, and patient-reported outcomes—for example, by accounting for possible differences at the patient, provider, or systems level. PCORI is interested in research that aims to determine which interventions can be most effective for eliminating disparities in outcomes.

- Compares benefits and risks of treatment, diagnostic, prevention, or service options, with a focus on eliminating disparities
- Compares and identifies practices for tailoring evidence-based interventions to patient populations at risk for disparities

The Addressing Disparities Priority Area is interested in applications that include team-based care or strategies to enhance family and caregiver involvement in patient care. The goal is to reduce disparities in vulnerable populations to improve patient-centered and clinical outcomes.

PCORI strongly encourages applicants to review the funded research on our website to ensure that their proposed research is not duplicative of projects we have already funded.

### **Addressing Disparities Targeted Populations**

PCORI's Addressing Disparities Priority Area is interested in research that focuses on previously understudied populations for whom effectiveness information is needed. Proposed research must focus on at least one of the following groups:

- Racial and ethnic minority groups
- Low-income groups
- Residents of rural areas
- Individuals with special healthcare needs, including individuals with disabilities
- Patients with low health literacy, numeracy, or limited English proficiency
- Sexual and gender minorities

### **A Note about Community Health Worker and Navigator Projects**

The Addressing Disparities Priority Area has funded many projects that focus on community health worker (CHW) and navigator interventions. Applications that aim to study these types of interventions must focus on one of the following areas, which are based on existing evidence gaps:

- Comparing different CHW and patient navigator program models, worker functions, training and certification levels, and implementation approaches across different settings, conditions, and populations<sup>10</sup>
- Examining the integration of CHW and patient navigators into the care team, determining specifically the organizational strategies and components that are essential to well-functioning

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<sup>10</sup> Institute for Clinical and Economic Review. *A review of program evolution, evidence on effectiveness and value, and status of workforce development in New England*. July 2013. <https://icer-review.org/wp-content/uploads/2016/01/CHW-Final-Report-07-26-MASTER.pdf>.

teams and the factors that increase acceptance by care teams<sup>11</sup>

Applications that propose research focusing on CHW or navigators as a primary component of interventions will undergo substantial scrutiny to ensure that the studies do not overlap significantly with previously funded studies or concurrent applications, and that they fill a gap within the program's portfolio. PCORI encourages applicants to review the current portfolio to avoid redundancy with funded projects.

### Research Designs of Interest

Traditional clinical effectiveness and implementation trials are likely to remain the most common approach to moving a clinical intervention along the research continuum from efficacy research to public health impact. Thoughtful use of new study designs, such as hybrid designs, could speed the translation of research findings into routine practice. Addressing Disparities studies using such hybrid designs have the potential to speed and improve the translation of clinical intervention uptake, identify more effective implementation strategies, and provide more useful information for patients, stakeholders, researchers, and decision makers.<sup>12,13</sup> For this solicitation, one of the primary aims must be focused around a comparative effectiveness research question, so hybrid type 1 and hybrid type 2 designs may be appropriate. Hybrid type 3 designs, where the primary aim is implementation research, would not be responsive.

PCORI seeks to support high-impact natural experiment studies in CER that take a population-based approach in achieving their research aims. PCORI is interested in rigorously designed studies assessing the impact of naturally occurring interventions related to policies, systems-level strategies, and community partnerships. Natural experiments may result in fruitful research on health and healthcare disparities and other areas where patient recruitment and retention in clinical trials has been challenging. Interventions may be related to social determinants of health and intervene on social needs, such as social or economic conditions that drive health and shape the potential to achieve health equity. Applicants will be expected to provide justification for how these policies affect the health status of the target population. Applicants should utilize strong designs, adhering to best practices in the field, indicating whether the intervention is exogenous in nature, and, if not, justifying how rigor will be maintained and potential confoundings will be addressed. Studies should seek to utilize stable interventions/programs or justify risks and benefits if the context or policies driving the intervention continue to change. When possible, applicants should use longitudinal, quasi-experimental study designs with concurrent control conditions that adhere to the PCORI Methodological Standards.

The PCORI Methodology Standards represent minimal requirements for the design, conduct, analysis, and reporting of scientifically valid PCOR. Applications must adhere to all relevant PCORI Methodology Standards, and any proposed deviations need to be justified. Given PCORI's interest in trials conducted

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<sup>11</sup> McDonald KM, Sundaram V, Bravata DM, et al. *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*. Vol 7: Care Coordination. Rockville, MD: Agency for Healthcare Research and Quality; September 29007 (Technical Reviews, No. 9.7.) 4, Review of Systematic Reviews of Care Coordination Interventions. <https://www.ahrq.gov/downloads/pub/evidence/pdf/caregap/caregap.pdf>.

<sup>12</sup> Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. 2012. Effectiveness-implementation hybrid designs: Combining elements of clinical effectiveness and implementation research to enhance public health impact. *Medical Care*. 50(3):217-226

<sup>13</sup> Bernet AC, Willens DE, Bauer MS. 2013. Effectiveness-implementation hybrid designs: Implications for quality improvement science. *Implementation Science*. 8(Suppl 1):S2.

in real-world practices and settings using representative patient populations, the standards for complex interventions may have special relevance. An additional resource for applicants using pragmatic design features is PCORI's Guidance on the Design and Conduct of Trials in Real-World Settings.

## V. Assessment of Prevention, Diagnosis, and Treatment Options

### Research of Interest: Comparative Clinical Effectiveness

Patients, caregivers, and clinicians often lack the appropriate evidence required to make the best choices about prevention, screening, diagnosis, monitoring, or treatment. Where therapies or technologies have been approved and marketed, there are often gaps in research comparing their effectiveness with that of other clinical options, and prior research may not have included outcomes that are important to patients and their caregivers. In addition, the existing evidence base might not be relevant for certain patient populations, such as those at the extremes of age or those with multiple comorbid conditions.

For the priority area on the Assessment of Prevention, Diagnosis, and Treatment Options, PCORI seeks to fund investigator-initiated research that does the following:

- Compares the effectiveness of two or more clinical interventions for the prevention, treatment, screening, diagnosis, or management that are known to be efficacious but have not been adequately compared in previous studies. Projects proposing to examine interventions that do not have sufficient prior evidence of efficacy will be considered only when those interventions are in reasonable widespread use. PCORI is particularly interested in studies that are conducted in typical clinical populations and that address the full range of relevant patient-centered outcomes.
- Addresses a high-priority evidence gap as identified by authoritative sources, such as prior systematic reviews or clinical practice guidelines. Documents a need for the proposed new research, based on a compelling need to have better evidence for informing clinical choices.
- Investigates, among compared groups, factors that account for variation in treatment outcomes, with attention paid to demographic, biological, clinical, social, economic, or geographic factors; comorbidities; and other factors that may influence those outcomes.

For this priority area, proposed projects should address the comparison of specific clinical services or clinical strategies that are defined clearly and that can be replicated in other clinical settings with minimal adaptations or changes. Projects that have the primary goal of developing and testing decision aids or testing the use of lay personnel who perform ancillary services in healthcare settings will not be considered responsive to this funding priority. Therefore, projects having a primary focus on the role of community health workers, patient navigators, or peer-coaching will be considered out of scope.

This broad-based funding opportunity is not confined to specific clinical services or patient populations; however, the program's goal is to expand the evidence base that pertains to clinical services that would be chosen by clinicians, patients, and caregivers in usual clinical delivery settings.

The services of interest include the following:

- Prescription drugs and biologics
- Surgical and other interventional procedures
- Techniques for disease screening
- Vaccinations and other interventions to prevent diseases
- Counseling and behavioral interventions
- Complementary and integrative services
- Rehabilitative services
- Diagnostic tests and procedures

## VI. Communication and Dissemination Research

The purpose of the Communication and Dissemination Research priority area is to support approaches to comparing communication strategies, dissemination strategies, or implementation strategies for overcoming barriers to adoption, adaptation, integration into routine clinical care, and sustainability of evidence-based interventions. Of additional interest is the comparison of strategies for stopping or halting practices that have not been proven to be effective and are possibly harmful (also known as de-implementation).

### Background

Every day, people face difficult health treatment and screening decisions that have more than one option, unknown or uncertain outcomes, or known outcomes that patients value differently. In such cases, when there is no single recommended course of action, it is crucial that patients have the information necessary to navigate the process to reach a decision that is right for them. Patient-centered care includes facilitating communication between patients and their care team and disseminating evidence-based information to inform patients, caregivers, and care teams about treatment options.

For the purposes of this funding announcement, we define the following terms:

- *De-implementation*: Stopping or abandoning practices that have not proved to be effective and are possibly harmful<sup>14</sup>
- *Dissemination strategies*: Mechanisms and approaches that are used to communicate and spread information about interventions to targeted users<sup>14</sup>
- *Implementation strategies*: Systematic processes or methods, techniques, activities, and resources that support the adoption, integration, and sustainment of evidence-based interventions into usual care settings<sup>14</sup>
- *Shared decision making*: There is no widely accepted definition for shared decision making

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<sup>14</sup> Rabin BA, Brownson RC. Terminology for dissemination and implementation research. In: Brownson RC, Colditz GA, Proctor EK, eds. *Dissemination and Implementation Research in Health: Translating Science to Practice*. 2nd ed. Oxford University Press; 2018:19-45.

(SDM). Systematic reviews have identified the following key elements of SDM: (1) define/explain the problem; (2) present options; (3) discuss benefits and risks of each option; (4) incorporate the values and preferences of the patient in the context of the decision at hand; (5) discuss the patient's ability to follow through with the plan; (6) discuss doctor recommendations; (7) check and clarify understanding; and (8) arrange follow-up.<sup>15,16</sup>

## Communication Research

Little evidence is available to guide best practices for the integration of patient decision support into routine clinical care. Translating medical evidence into formats that are integrated and accessible, and that clearly outline the risks and benefits of various healthcare options for patients, caregivers, families, and healthcare providers, is fundamental to effectively communicating PCOR and CER.<sup>17,18,19</sup> Areas of interest in communication research include the following:

### Shared Decision Making

SDM is a process in which patients and physicians collaborate to make decisions based on the best available evidence of the likelihood of risks and benefits, while considering patient preferences. A systematic review of interventions to enhance shared decision making found that interventions targeting both the health professional responsible for sharing a decision with the patient and the patient himself or herself appear promising for improving SDM in routine clinical practice.<sup>20</sup> Additional systematic reviews assessing the effects of decision aids compared with usual care on people facing a variety of health decision contexts found that people who used decision aids felt more knowledgeable and better informed, were clearer about their values, and had more accurate risk perceptions.<sup>21,22</sup> Although decision aids can support SDM, especially in information delivery and exchange, the use of a decision aid alone does not ensure that quality SDM will occur. PCORI is seeking applications that compare different SDM interventions and implementation strategies to improve health professionals' adoption of shared decision making into healthcare workflows and patient-provider interactions, so the interventions become a part of routine care.

### Communicating Uncertainty and Risk

Uncertainty and risk are inevitable in health care, as many healthcare decisions involve uncertainties and trade-offs. Uncertainty is a significant and common challenge faced by every patient who receives

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<sup>15</sup> Makoul G, Clayman ML. An integrative model of shared decision making in medical encounters. *Patient Educ Couns*. 2006;60:301-312.

<sup>16</sup> Bomhof-Roordink H, Gartner FR, et al. Key components of shared decision making models: a systematic review. *BMJ Open*. 2019;9:e031763.

<sup>17</sup> Nielsen-Bohlman L, Panzer A, Kindig D. *Health Literacy: A Prescription to End Confusion*. National Academies Press; 2004.

<sup>18</sup> Lipkus IM, Peters E. Understanding the role of numeracy in health: proposed theoretical framework and practical insights. *Health Educ Behav*. 2009;36(6):1065-1081.

<sup>19</sup> Sorensen K, Van den Broucke S, Fullam J, et al; Consortium Health Literacy Project European. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*. 2012;12(8).

<sup>20</sup> Legare F, Turcotte S, et al. Patients' perceptions of sharing in decisions: a systematic review of interventions to enhance shared decision making in routine clinical practice. *Patient*. 2012;5(1):1-19.

<sup>21</sup> Stacey D, Légaré F, Lewis K, et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev*. 2017;4:CD001431. doi:10.1002/14651858.CD001431.pub5

<sup>22</sup> Stacey D, Légaré F, Col NF, et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev*. 2014;1:CD001431. doi:10.1002/14651858.CD001431.pub4

health care and for every clinician who provides it.<sup>23</sup> The promise of personalized medicine is that it will generate personalized therapies, but it will also generate hard-to-understand personalized risk and benefit information based on population-level findings. In addition, new medical technologies are rapidly outpacing the development of evidence regarding benefits and harms. A seminal publication on patient-centered communication from the National Cancer Institute identified managing uncertainty as a core function of patient–clinician communication.<sup>24</sup> A systematic review identified a critical need for identifying and prioritizing uncertainties that should be communicated to patients by healthcare providers; methods that measure and provide a better understanding of uncertainties as they pertain to risks, practice recommendations, and other types of evidence; and standardized language used to communicate uncertainties in clinical evidence.<sup>25</sup> PCORI is seeking applications that compare approaches to data presentation and communication of uncertainty and risk to improve and inform individual treatment decisions, while acknowledging that risk prediction models based on routinely collected health data perform well for populations but with great uncertainty for individuals.

### **Communication among Care Teams**

Patients with complex and/or chronic conditions often interact with many physicians, nurses, medical assistants, or other trained professionals across multiple settings. Lack of care coordination can lead to serious complications, including medication errors, preventable hospital readmissions, and unnecessary pain and suffering for patients. Higher costs is also a concern; the Institute of Medicine has estimated that care coordination efforts could result in \$240 billion in annual healthcare savings in the United States.<sup>26</sup> The National Quality Strategy, led by the Agency for Healthcare Research and Quality on behalf of the United States Department of Health and Human Services, aims to promote effective communication and coordination of care across the healthcare system by focusing on three goals, one of which is improving the quality of communications across care settings. PCORI is seeking applications that compare strategies that facilitate communication among healthcare professionals and/or within healthcare teams to encourage information sharing and to promote care coordination in relevant decisions about managing patient care. Such research may address how to accomplish shared goals within and across settings to support high-quality patient care.<sup>27,28,29</sup>

### **Dissemination and Implementation Research**

Dissemination research is the systematic study of processes and factors that lead to widespread use of an evidence-based intervention by the target population. Its focus is to identify the best methods that

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<sup>23</sup> Han PKJ, Babrown A, et al. Uncertainty in health care: towards a more systematic program of research. *Patient Educ Couns*. 2019;102:1756-1766.

<sup>24</sup> Epstein RM, Street RL Jr. *Patient-Centered Communication in Cancer Care: Promoting Healing and Reducing Suffering*. National Cancer Institute; 2007. NIH publication 07-6225.

<sup>25</sup> Han PK. Conceptual, methodological, and ethical problems in communicating uncertainty in clinical evidence. *Med Care Res Rev*. 2013;70(suppl 1):145-365.

<sup>26</sup> Yong PL, Saunders RS, Olsen LA, eds; Institute of Medicine Roundtable on Evidence-Based Medicine. *The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary*. National Academies Press; 2010.

<sup>27</sup> Kreps GL. Communication and effective interpersonal health care teams. *Int Arch Nurs Health Care*. 2016;2(3):051.

<sup>28</sup> Grembowski D, Schaefer J, Johnson KE, et al. A conceptual model of the role of complexity in the care of patients with multiple chronic conditions. *Med Care*. 2014;52(3)(suppl 2):s7-s14.

<sup>29</sup> Schottenfeld L, Petersen D, Peikes D, et al. *Creating Patient-Centered Team-Based Primary Care*. Agency for Healthcare Research and Quality; March 2016. AHRQ publication 16-0002-EF.

enhance the uptake and utilization of the intervention.<sup>14</sup> Implementation research seeks to understand the processes and factors that are associated with successful integration of evidence-based interventions within a particular setting. Implementation research also includes the study of discontinuation of interventions that have been found to be ineffective.<sup>14</sup>

The intent of dissemination and implementation research is to understand how best to spread and sustain knowledge and the associated evidence-based interventions, as well as how and why health information may or may not reach different groups of patients and stakeholders. Effectiveness is assessed throughout as interventions spread to and are adopted and adapted by diverse populations and settings.<sup>30</sup> Use of hybrid study designs can speed the translation of research findings into routine practice. Effectiveness–implementation hybrid models blend the design components of clinical effectiveness trials and the implementation strategy.<sup>12</sup> Dissemination studies using such hybrid designs have the potential to speed and improve the translation of clinical intervention uptake; identify more effective implementation strategies; and provide more useful information for patients, stakeholders, researchers, and decision makers.<sup>31</sup> The knowledge base about how to disseminate and implement evidence-based interventions lags behind the knowledge of evidence-based interventions and programs. PCORI is seeking applications that compare dissemination and implementation strategies that demonstrate success in integrating evidence-based interventions into clinical practice.

Examples of relevant research topics include, but are not limited to, the following:

- Compare communication strategies of shared decision making in the context of COVID-19 or other life-threatening health situations.
- Compare implementation strategies to assess the adoption, integration, and sustainability of shared decision making into clinical care.
- Compare interventions that help patients and caregivers facing difficult medical decisions, in which the outcomes are ambiguous or uncertain, to improve their understanding of the outcomes and facilitate their decision making.
- Compare strategies that optimize communication among healthcare providers and/or healthcare teams for coordinating care to improve clinical care and outcomes.

## VII. Improving Healthcare Systems

### Overview

The Improving Healthcare Systems Priority Area invites applications for research that study the comparative clinical effectiveness of alternative features of healthcare systems (e.g., innovative technologies, incentive structures, healthcare service–delivery designs) that are intended to optimize the quality, outcomes, and efficiency of patient care and that have the greatest potential for sustained

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<sup>30</sup> Glasgow RE, Vinson C, Chambers D, et al. National Institutes of Health approaches to dissemination and implementation science: current and future directions. *Am J Public Health.* 102(7):1274-1281.

<sup>31</sup> Bernet AC, Willens DE, Bauer MS. Effectiveness-implementation hybrid designs: Implications for quality improvement science. *Implement Sci.* 2013;8(suppl 1):S2.

impact and replication within and across healthcare systems. Healthcare systems encompass multiple levels (e.g., individual patients, family and social supports, providers and care teams, organizations or practice settings, local community resources, and state- and national-level policy environments) and include entities organized to deliver, arrange, purchase, or coordinate health services. Healthcare delivery models (e.g., integrated health systems and patient-centered medical homes) and care settings (e.g., hospitals, physician practices, dental offices, nursing homes, community health clinics, patients’ homes) also define healthcare system operations. Settings also can include nontraditional delivery sites such as schools, pharmacies, or public housing units where interventions are deployed to improve health and healthcare. PCORI seeks studies that will affect healthcare delivery by determining which system features lead to improved PCOs and which provide valuable knowledge to patients, their caregivers, and clinicians, as well as other key stakeholders, including payers and employers. The diagram below is intended to illustrate this summary. Please note that the shading of two levels—National Health Environment and State Health Environment—indicates that although they clearly influence and shape the broader health policy environment, different state-level policies and programs may be targets for research interventions if they can be directly related to health and healthcare outcomes that patients and other stakeholders value. PCORI does not consider the national health environment as specific targets for research interventions.

### The Healthcare System

Figure adapted from Taplin SH, Anhang Price R, Edwards HM, et al. Introduction: understanding and influencing multilevel factors across the cancer care continuum. *J Natl Cancer Inst.* 2012;(44):2-10.



### Background

Healthcare organizations are under constant pressure from competing sources to improve aspects of care, but they often lack the critical information needed to guide decisions related to system-level change. Research could help develop a body of evidence supporting effective interventions that would



enable organizations to provide higher-quality care that is more accessible, coordinated, effective, and efficient, and that would ultimately improve PCOs.

The public entrusts PCORI with funding research that will matter to patients, their caregivers, and other stakeholders (i.e., clinicians and their professional societies, hospitals, health systems administrators, payers [insurance], purchasers [business], industry [pharmaceutical and medical device companies], researchers, policy makers, and training institutions). PCORI seeks to change the way in which research is conducted, by emphasizing the role of diverse research teams that reflect the varying perspectives of such key stakeholders. PCORI distinguishes itself by supporting research that actively engages patients, caregivers, and other stakeholders in all phases of the research process—from inception to conclusion—including generating research questions, reviewing research applications, conducting research, disseminating research findings, promoting the implementation of research findings, and using the results to understand and address patient and other stakeholder needs.

Over the past two decades, the Institute of Medicine (IOM) and others have sharpened the focus on ensuring that healthcare systems are designed and oriented to achieve the health outcomes most desired by individual patients—that is, to become more patient-centered. In particular, IOM has addressed key aspects of systems improvement, including making care:

- Accessible
- Effective
- Patient-centered
- Timely
- Efficient
- Safer
- Equitable
- Coordinated

The Improving Healthcare Systems Priority Area seeks to fund CER that addresses the same areas as those addressed by IOM.

Interventions designed to achieve the IOM aims listed above may target the following:

- Technology (e.g., interoperative electronic health records, telemedicine, patient-accessible health records)
- Patient incentives (e.g., free or subsidized preventive care and automatic enrollment in certain follow-up programs)
- Provider incentives (e.g., free continuing medical education units for certain courses, reduced paperwork, provision of key comparative quality performance information). Only nonfinancial incentives are acceptable for providers.
- Organizational models and policies within and across healthcare systems (e.g., patient-centered

medical homes, standing orders)

- Personnel (e.g., multidisciplinary teams, peer navigators, CHWs)

Although a focus on personnel is a key intervention area supported by the Improving Healthcare Systems Priority Area, the Improving Healthcare Systems portfolio already includes many projects that evaluate interventions focused on CHWs and patient or peer navigators. The Improving Healthcare Systems Priority Area is currently not interested in funding additional applications whose primary aim is to compare the use of CHWs or navigators with “usual care” or care delivered by other healthcare personnel. PCORI will consider interventions focused on CHWs and patient or peer navigators if they are part of a larger multicomponent intervention, are integrated with multidisciplinary healthcare teams, or are compared with other non-personnel-based efficacious interventions.

In addition, PCORI may consider applications that propose to compare the use of CHWs and patient or peer navigators with “usual care” or care delivered by other healthcare personnel if there is a strong rationale supporting the need for additional research (e.g., studies target a rare disease or an understudied population or setting). PCORI encourages applicants to discuss such proposals with the Improving Healthcare Systems program before submitting a LOI.

Innovation and changes in healthcare systems and in the behavior of healthcare system participants are often driven by economic, political, and social needs to improve access to care or quality of care, to attract patients or enrollees, and to contain costs. The effects of all such innovations may vary considerably among subgroups of the general population, but this heterogeneity of treatment effect is often inadequately measured. PCORI and the Improving Healthcare Systems program are particularly interested in studies that include adequately powered subgroup analysis and address understudied or underrepresented patient populations in research. See the [Populations Studied and Recruited](#) section.

### Research of Interest

PCORI seeks to fund investigator-initiated research on the effects of system changes on the broad outcomes listed below. We are especially interested in studies that conduct head-to-head comparisons with or without “usual care” as a comparator. (See the [Requirements for PCORI Research](#) section for more information on “usual care.”) Such studies may include the following:

- Patients’ access to care, high quality of care, support for self-care, and coordination of care across healthcare settings
- Professional decision making on the basis of patients’ personal values
- Experiences that are important to patients and their caregivers, such as overall health, functional ability, health-related quality of life, stress, severity of symptoms, survival, and unanticipated healthcare utilization, such as unexpected hospital stays or visits to the emergency department
- The efficiency of healthcare delivery, as measured by the amount of ineffective, duplicative, or wasteful care provided to patients

The Improving Healthcare Systems Priority Area is also interested in funding studies that do the

following:

- Leverage existing research resources, such as adding patient-centered outcomes research to an existing large clinical trial, using established practice-based research networks, or analyzing large databases that contain valuable, relevant information that may be used to answer important CER questions.
- Leverage healthcare system resources in support of some or all of the intervention requirements. Especially attractive is the possibility of broader and sustained impact through potential adoption by participating or supporting healthcare organizations and stakeholders (e.g., payers), should the intervention prove effective.
- Test practices that combine evidence-based guidelines (such as [Choosing Wisely](#)) with patient incentives, provider incentives, or patient and provider incentives combined, to elicit patient preferences and reduce harms faced by patients simultaneously.

### Sample Research Questions

The following are examples of the types of questions that patients, clinicians, or healthcare administrators might ask and that your research might help answer. This is not an exhaustive list.

- An 84-year-old woman in a rural community and with multiple chronic diseases is having increasing difficulty managing at home alone, but she does not want to leave her home or neighborhood to live in a nursing home. What are the benefits and drawbacks of a new care management program designed to help her stay at home and remain safe and independent, compared with a program that links her to comprehensive community services?
- A 27-year-old Hispanic man with diabetes, chronic back pain, and depression has been invited by his public hospital–based clinic to participate in a group-visit program for patients with chronic conditions; the program is led by a behavioral care specialist and a health educator. How likely is it that he will benefit from this program compared with the usual care he has been receiving (defined by quarterly visits with his primary care practitioner punctuated by referrals to specialists as needed)? What is the nature of the benefit? Are there any risks? What should his physician recommend?
- A 50-year-old Black man has frequent exacerbations of his chronic obstructive pulmonary disease that trigger recurrent emergency department visits and acute-care hospitalizations. Does regularly scheduled home-based respiratory care reduce his emergency department utilization and hospital readmissions compared with physician office visits that he or his caregiver must schedule? Does it improve functional status, health-related quality of life, or other PCOs?

### Research Designs of Interest

Traditional clinical effectiveness and implementation trials are likely to remain the most common approach to moving a clinical intervention along the research continuum from efficacy research to public health impact. Thoughtful use of new study designs, such as hybrid designs, could speed the translation of research findings into routine practice. Improving Healthcare Systems studies using such

hybrid designs have the potential to speed and improve the translation of clinical intervention uptake, identify more effective implementation strategies, and provide more useful information for patients, stakeholders, researchers, and decision makers<sup>12,13</sup>. For this solicitation, one of the primary aims must be focused around a comparative effectiveness research question, so hybrid type 1 and hybrid type 2 designs may be appropriate. Hybrid type 3 designs, where the primary aim is implementation research, would not be responsive.

PCORI seeks to support high-impact natural experiment studies in CER that take a population-based approach in achieving their research aims. PCORI is interested in rigorously-designed studies assessing the impact of naturally occurring interventions related to policies, systems level strategies, and community partnerships. Natural experiments may result in fruitful research on health and healthcare disparities and other areas where patient recruitment and retention in clinical trials has been challenging. Interventions may be related to social determinants of health and intervene on social needs, such as social or economic conditions that drive health and shape the potential to achieve health equity. Applicants will be expected to provide justification for how these policies affect the health status of the target population. Applicants should utilize strong designs, adhering to best practices in the field, indicating whether the intervention is exogenous in nature, and if not, justifying how rigor will be maintained and potential confoundings will be addressed. Studies should seek to utilize stable interventions/programs or justify risks and benefits if the context or policies driving the intervention continue to change. When possible, applicants should utilize longitudinal, quasi-experimental studies designs with concurrent control conditions that adhere to the PCORI Methodological Standards.

The PCORI Methodology Standards represent minimal requirements for the design, conduct, analysis, and reporting of scientifically valid PCOR. Applications must adhere to all relevant PCORI Methodology Standards, and any proposed deviations need to be justified. Given PCORI's interest in trials conducted in real-world practices and settings using representative patient populations, the standards for complex interventions may have special relevance. An additional resource for applicants using pragmatic design features is PCORI's Guidance on the Design and Conduct of Trials in Real-World Settings.

### **Evidence to Action Networks**

PCORI is interested in connecting PCORI-funded investigators who are studying similar research topics and populations, to help strengthen the body of research and to facilitate collaborative learning and dissemination of research findings. To meet this goal, PCORI has set up Evidence to Action Networks (E2ANs), whereby we facilitate engagement among awardees and cross-learning between projects and teams composed of researchers, patients, caregivers, and other stakeholders. In addition, PCORI facilitates exchanges between awardees and end-users (e.g., patients; caregivers; and other stakeholders, such as payers, employers and purchasers, clinicians, professional societies, policy makers, and training institutions) for disseminating and implementing important research findings.

PCORI encourages awardees to participate in E2ANs as they become available.

## **VIII. LOI Review**

Applying for funding from PCORI is a two-stage process. An LOI must be submitted, and an applicant

must be invited to submit an application.

LOIs are evaluated based on the following:

- Importance and relevance of the topics to PCORI priorities, as evidenced by critical gaps identified by clinical guidelines developers and recent systematic reviews
- Clarity and credibility of responses to the LOI questions
- The investigators' prior relevant experience
- Programmatic fit and balance, considering whether the LOI overlaps with previously funded studies or concurrent LOIs and/or applications to a significant degree or, conversely, whether the application fills a gap in the portfolio with certain characteristics, including disease category, topics, priority population, methodologies, and other variables

PCORI recognizes that applications germane to the [Special Areas of Emphasis](#) (IDD, Maternal Morbidity/Mortality, and the COVID-19 topic) may require a larger budget to adequately answer the research question due to the size and scope of the proposed study. As such, PCORI will consider budget requests of up to \$10 million in direct costs only for those submissions germane to this PFA's SAEs. This budget request will be reviewed and either approved or denied by PCORI staff at the LOI stage.

PCORI staff will review the required justification in the LOI template substantiating the request for a budget to exceed \$5 million in direct costs describing how any additional funds will be used, and the documenting the budget requirements with respect to the scope, data collection, and analysis efforts of the proposed research. These awards are not to exceed the maximum research project period of 5 years for this PFA.

Applications with budget that exceeds \$5 million in direct costs without prior approval from PCORI at the LOI feedback stage will be deemed administratively non-compliant and will not be reviewed.

Only applicants whose LOIs are deemed most responsive to this PFA will be invited to submit a full application. A minimum of two PCORI staff review the LOIs, which are not scored during review.

The LOI Template provides guidance on responding to each item. Please refer to the [Submission Instructions](#) for information on how to submit an LOI via [PCORI Online](#).

## IX. Merit Review

PCORI's merit review process is designed to support the following goals:

- Identify applications that have the strongest potential to help patients, caregivers, clinicians, policy makers, and other healthcare system stakeholders make informed decisions to improve patient outcomes.
- Implement a transparent, fair, objective, and consistent process to identify these applications.
- Elicit high-quality feedback that reflects a diversity of perspectives to ensure that the PCORI-funded research reflects the interests and views of patients and other stakeholders and those who care for them, and that it meets the criteria for scientific rigor.

- Fund projects that fill important evidence gaps and have strong implementation potential.
- Regularly evaluate and continually improve the merit review process and policies in support of PCORI's mission.

PCORI merit review is a multiphase process that includes the review panel's preliminary review of full applications and an in-person panel discussion of a subset of applications (identified by PCORI's Program staff and based on the preliminary review and program priorities). After merit review, key steps include: post-panel review of application by PCORI staff; the Selection Committee's recommendation of applications for funding; and, finally, Board award approval.

### Preliminary Review

PCORI conducts rigorous merit review of the full applications it receives. Note that PCORI may eliminate applications from the review process for administrative or scientific reasons (e.g., non-responsiveness). An application may be administratively withdrawn if it is incomplete; submitted past the stated due date and time; or does not meet the formatting criteria outlined in the [Submission Instructions](#), in the PCORI templates, and in PCORI Online. An application may be scientifically withdrawn if it is not responsive to the guidelines described in this PFA, describes research that is not comparative, includes a cost-effectiveness analysis, or otherwise does not meet PCORI programmatic requirements.

PCORI Merit Review Officers (MROs) recruit each review panel based on the number of invited LOIs and topic areas represented by the invited LOIs. MROs recruit the panel chair, scientist reviewers who are subject matter experts, patient representatives, and representatives of other stakeholder groups. All panel members receive training during the review cycle to ensure that they understand the programmatic and organizational goals of review.

Below are PCORI's merit review criteria. PCORI's merit review panels use these criteria during the preliminary and in-person review phases to evaluate and score all submitted applications, and to ensure consistency and fairness in how applications are evaluated.

#### **Criterion 1. Potential for the study to fill critical gaps in evidence:**

The application should address the following questions:

- Does the application convincingly describe the clinical burden?
- Does the application identify a critical gap in current knowledge as noted in systematic reviews, guideline development efforts, or previous research prioritizations?
- Does the application identify a critical gap in current knowledge, evidenced by inconsistency in clinical practice and decision making?
- Would research findings from the study have the potential to fill these evidence gaps?

#### **Criterion 2. Potential for the study findings to be adopted into clinical practice and improve delivery of care**

The application should describe how evidence generated from this study could be adopted into clinical practice and delivery of care by others. The application should also address the following questions:

- Does the application identify who will make the decision (i.e., the decision maker) or use (i.e., the end-user) the study findings (not the intervention) this study produces, such as local and national stakeholders?
- Does the application identify potential end-users of study findings—such as local and national stakeholders—and describe strategies to engage these end-users?
- Does the application provide information that supports a demand for this kind of a study from end-users?
- Would this study’s research findings have the potential to inform decision making for key stakeholders? If so, provide an example. How likely is it that positive findings could be reproduced by others, resulting in improvements in practice and patient outcomes? Identify the potential barriers that could hinder adoption of the intervention by others.
- Does the application describe a plan for how study findings will be disseminated beyond publication in peer-reviewed journals and at national conferences?

### **Criterion 3. Scientific merit (research design, analysis, and outcomes)**

The application should show sufficient technical merit in the research design to ensure that the study goals will be met. The application should also address the following questions:

- Does the application describe a clear conceptual framework anchored in background literature which informs the design, key variables, and relationship between interventions and outcomes being tested?
- Does the Research Plan describe rigorous methods that demonstrate adherence to the PCORI Methodology Standards?
- Is the overall study design justified?
- Are the patient population and study setting appropriate for the proposed research question?
- Does the application provide justification that the outcome measures are validated and appropriate for the population?
- Are each of the comparators (e.g., active intervention arm and comparator arm) described clearly and well-justified? If “usual care” is one of the arms, is it adequately justified, and will it be sufficiently measured?
- Are the sample sizes and power estimates appropriate? Is the study design (e.g., cluster randomized design, randomized controlled trial, or observational study) accounted for and is the anticipated effect size adequately justified?
- Is the study plan feasible? Is the project timeline realistic, including specific scientific and engagement milestones? Is the strategy for recruiting participants feasible? Are assumptions about participant attrition realistic, and are plans to address patient or site attrition adequate?

#### **Criterion 4. Investigator(s) and environment**

The application should demonstrate the appropriateness (e.g., qualifications and experience) of the investigator(s)/team and the environment's capacity (e.g., resources, facilities, and equipment) to support the proposed project. Assessment of this criterion should not focus on the institution's reputation, but rather on the breadth and depth of its available personnel and resources. The application should also address the following questions:

- How well-qualified are the PIs, collaborators, and other researchers to conduct the proposed activities? Is there evidence of sufficient clinical or statistical expertise (if applicable)?
- Does the investigator or co-investigator have demonstrated experience conducting projects of a similar size, scope, and complexity?
- If the project is collaborative or dual-PI, do the investigators have complementary and integrated expertise? Are the leadership, governance, and organizational structures appropriate for the project?
  - (Dual-PI Option Only) Does the Leadership Plan adequately describe and justify PI roles and areas of responsibility?
- Is the level of effort for each team member appropriate for successfully conducting the proposed work?
- Does the application describe adequate availability of and access to facilities and resources (including patient populations, samples, and collaborative arrangements) to carry out the proposed research?
- Is the institutional support appropriate for the proposed research?

#### **Criterion 5. Patient-centeredness**

The application should demonstrate that the study focuses on improving patient-centered outcomes and employs a patient-centered research design—that is a design informed or endorsed by patients. (NOTE: The study can be patient-centered even if the end-user is not the patient, as long as patients will benefit from the information.) The application should also address the following questions:

- Does the application include a thorough description about which outcomes (both benefits and harms) are important to patients, and are those outcomes included in the study plan?
- Does the application provide information that indicates that closing the evidence gap is important to patients and other stakeholders?
- Are the interventions being compared in the study available to patients now, and are they the best options for comparison (including whether they would be chosen by patients and their healthcare providers for managing the condition being studied)?

#### **Criterion 6. Patient and stakeholder engagement**

The application should demonstrate the engagement of relevant patients and other stakeholders (e.g.,

patients, caregivers, clinicians, policy makers, hospital and health system representatives, payers [insurance], purchasers [business], industry, researchers, training institutions) in the conduct of the study. Quality of engagement will be evaluated based on scope, form, and frequency of patient and stakeholder involvement throughout the research process.

The application should also address the following questions:

- Does the application provide a well-justified description of how the research team incorporates stakeholder involvement? Does the study include the right individuals (e.g., patients, caregivers, clinicians, policy makers, hospital and health system representatives, payers, purchasers, industry, researchers, and training institutions) to ensure that the projects will be carried out successfully?
- Does the application show evidence of active engagement among scientists, patients, and other stakeholders throughout the research process (e.g., formulating questions, identifying outcomes, monitoring the study, disseminating, and implementing)? Is the frequency and level of patient and stakeholder involvement sufficient to support the study goals?
- Is the proposed engagement approach appropriate and tailored to the study?
- Are the roles and the decision-making authority of all study partners described clearly?
- Are the organizational structure and resources appropriate to engage patients and stakeholders throughout the project?

### **In-Person Review**

During preliminary review, all administratively and scientifically compliant applications are evaluated and scored by panels of external reviewers based on PCORI's merit review criteria, including evaluation of adherence to the PCORI Methodology Standards. After preliminary review, PCORI program staff members evaluate panel scores and critiques to identify a subset of applications for merit reviewers to discuss at the in-person review meeting. Not all submitted applications move forward to in-person review.

During the in-person review, merit reviewers meet to discuss applications and to clarify further the merits of the proposed research. They also identify areas for improvement. Each application is re-scored based on the content of discussion. The Panel Chair and PCORI MRO lead the in-person panel meeting and ensure that all applications receive a fair and thorough review according to the standards outlined in the PFA.

### **Post-Panel Review**

After the in-person meeting, PCORI program staff evaluate final merit review panel scores and comments, identify duplication or synergy among funded projects, and consider the fit of applications within the programmatic vision. Program staff members then recommend projects to a Selection Committee, which includes members of the Board. The Selection Committee considers recommendations and works with staff to identify a slate of applications for possible funding based on merit review scores, programmatic balance and fit, and PCORI's strategic priorities. This slate is then



proposed to the Board for consideration and approval.

In addition, PCORI evaluates applicant risk before issuing a PCORI award. Factors considered include financial stability, quality of management systems, audit findings, and past performance on PCORI awards (e.g., compliance with PCORI reporting requirements, conformance to PCORI terms and conditions on previous awards, and timely achievement of milestones). Based on the risk assessment, PCORI may impose special terms and conditions on awardees or withhold contract issuance until such business risks are mitigated. PCORI will not award new contracts to current awardees with overdue reports (progress, interim, final, etc.) until the overdue reports have been submitted to PCORI.

### Summary Statements and Funding Recommendations

Summary statements are provided to applicants approximately two weeks before funding decisions are announced. If an application progresses to in-person discussion, the applicant will receive a summary statement which will include:

- In-person panel discussion notes
- Final average overall score
- Preliminary reviewer critiques
- Application quartile, to help applicants understand how they did relative to other discussed applications, as appropriate

Summary statements for applications that do not progress to in-person discussion include only the preliminary reviewer critiques.

Funding recommendations are made by identifying meritorious applications that fit the programmatic needs and that satisfactorily address the merit review criteria while adhering to the PCORI Methodology Standards. Programs also consider the funds allotted for the current funding announcement when deciding which applications to recommend to the Board for approval. Applicants to this current cycle's PFA will receive summary statements and notification of the funding status of their application no later than November 2021.

## X. PCORI Policies that Govern Awardees Related to Data Access, Privacy, and Public Reporting

Applicants should be aware that all PCORI awardees are required to comply with the following requirements:

### Registering Research Projects

PIs are required to use the naming convention "PCORI-PCORI application number" (i.e., PCORI-XXXX-XXXXX). Clinical trials must be registered before enrollment of the first patient. All trials that meet the definition on the [NIH database](https://prsinfo.clinicaltrials.gov/)<sup>32</sup> (see [Data Element Definitions](#)) are required to register, if funded.

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<sup>32</sup> Available at <https://prsinfo.clinicaltrials.gov/>.

Funded clinical trials or observational outcomes studies must be registered at [ClinicalTrials.gov](https://clinicaltrials.gov).

Funded evidence-synthesis studies must be registered at [PROSPERO](https://www.prospero.org).<sup>33</sup> Funded patient registries must be registered at <https://patientregistry.ahrq.gov/>.

### **PCORI Public Access Policy**

PCORI requires all awardees to adhere strictly to PCORI's publication policies, which will be shared with awardees within the research contract.

### **Standards for Privacy of Individually Identifiable Health Information**

On August 14, 2002, the Department of Health and Human Services issued a final modification to the Standards for Privacy of Individually Identifiable Health Information, the "Privacy Rule." The Privacy Rule is a federal regulation under the Health Insurance Portability and Accountability Act (HIPAA) of 1996 that governs the protection of individually identifiable health information and is administered and enforced by the Department of HHS Office for Civil Rights.

Decisions about the applicability and implementation of the Privacy Rule reside with the researcher and his or her institution. The [Office for Civil Rights](https://www.hhs.gov/ocr/privacy)<sup>34</sup> provides information on the Privacy Rule, including a complete Regulation Text and a set of decision tools related to "Am I a covered entity?" Information on the impact of the HIPAA Privacy Rule on NIH processes involving the review, funding and progress monitoring of grants, cooperative agreements, and research contracts is available from [NIH](https://www.nih.gov).<sup>35</sup>

### **Data Management and Data-Sharing Plan**

PCORI is committed to publishing and disseminating all information and materials developed using PCORI funding, in accordance with its authorizing legislation. All recipients of PCORI contracts must agree to these principles and take steps to facilitate data availability.

PCORI encourages openness in research and making research data available for purposes of replication and reproducibility. As such, if an award is made, the awardee will be expected to adhere to [PCORI's Policy for Data Management and Data Sharing](#). The Policy articulates PCORI's requirement that certain Awardees make the underlying data and data documentation (e.g., study protocol, metadata, and analytic code) from their PCORI-funded research projects available to third-party requestors.

A full data management and data sharing plan is not required at the time of application. If an award is made -- specifically for the Pragmatic Clinical Studies (PCS) and the targeted PFA studies -- the Awardee is required to develop and maintain such a plan, which is described in detail in the [PCORI Methodology Standards for Data Integrity and Rigorous Analyses](#), specifically Standard IR-7. This plan must be appropriate for the nature of the research project and the types of research project data, and consistent with applicable privacy, confidentiality, and other legal requirements. The Policy includes details about what data certain Awardees will be expected to deposit into a PCORI-designated data repository and when that data would be available for third-party requests.

For research awards funded under [Broad funding announcement](#) (Assessment of Options, Improving

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<sup>33</sup> Available at <http://www.crd.york.ac.uk/prospero/>.

<sup>34</sup> Available at <http://www.hhs.gov/ocr/>.

<sup>35</sup> Available at <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-03-025.html>.



Healthcare Systems, Addressing Disparities, Communication and Dissemination Research, Improving Methods), the Policy calls for Awardees to maintain the Full Data Package for seven (7) years. PCORI may, in selective cases, notify the researcher of its intent to provide funds for the deposition of the Full Data Package in a PCORI-designated repository in circumstances where PCORI requests such deposition.

The information here is meant for informational purposes only and does not attempt to be an exhaustive representation of the [Policy for Data Management and Data Sharing](#). Please refer to the [Policy](#) in its entirety for additional information.

### **Peer Review and Release of Research Findings**

PCORI has a legislative mandate to ensure the scientific integrity of the primary research it supports and to make study findings widely available and useful to patients, clinicians, and the general public within a specific timeframe. Accordingly, the PCORI Board of Governors (Board) adopted the [Process for Peer Review of Primary Research and Public Release of Research Findings](#).<sup>36</sup>

In summary, Awardee Institutions are required to submit to PCORI for peer review a draft final research report that provides the methodological details, describes the main study results, and interprets the findings in clinical or other decisional contexts. After Awardee Institutions have responded to reviewers' comments to PCORI's satisfaction, the report will be accepted and considered final. PCORI will then prepare two 500-word standardized abstracts summarizing the study results (as detailed below), which the Awardee Institution will review and approve.

No later than 90 days after the draft final research report is accepted, PCORI will post the following materials on its website: (1) a 500-word abstract for medical professionals; (2) a 500-word standardized abstract summarizing the study results for patients and the general public; (3) a link to the study record on [ClinicalTrials.gov](#) (as applicable); and (4) ancillary information, including conflict of interest disclosures. The final research report, along with anonymized reviewer comments, will be made publicly available on the PCORI website no later than 12 months after its acceptance, except by prior mutual agreement with the Awardee Institution.

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<sup>36</sup> See <http://www.pcori.org/sites/default/files/PCORI-Peer-Review-and-Release-of-Findings-Process.pdf>.