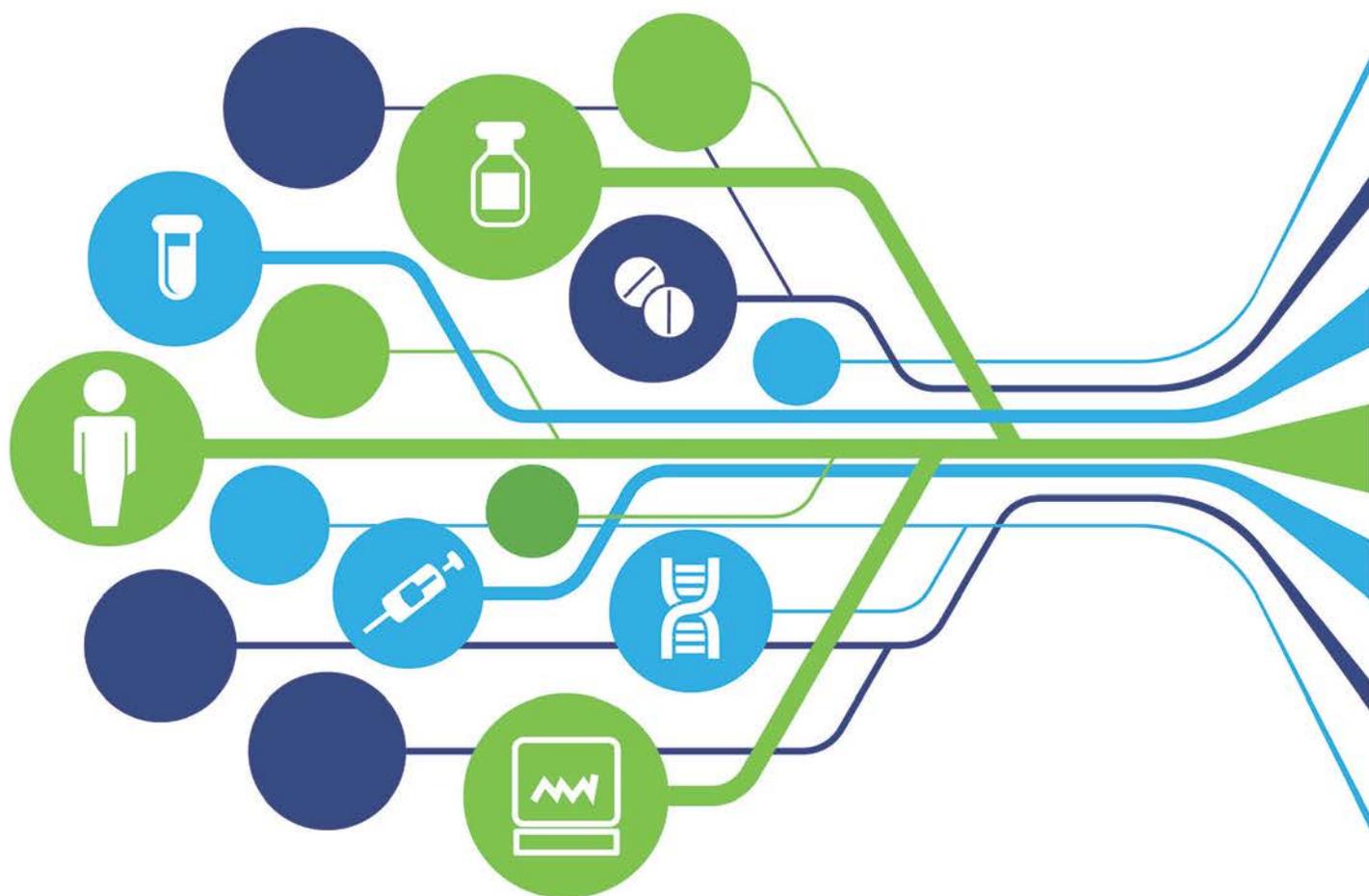


PCORI Dissemination & Implementation

Framework



February 2015

PCORI Dissemination and Implementation Framework

February 2015

Dominick Esposito
Jessica Heeringa
Katharine Bradley
Sarah Croake
Laura Kimmey

Submitted to:
Patient-Centered Outcomes Research Institute
1828 L Street NW 9th Floor
Washington, DC 20036
Project Officer: Orlando Gonzales

Submitted by:
Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543-2393
Telephone: (609) 799-3535
Facsimile: (609) 799-0005
Project Director: Dominick Esposito
Reference Number: 40364.402

ACKNOWLEDGMENTS

A team led by Mathematica Policy Research prepared this report for the Patient-Centered Outcomes Research Institute (PCORI). We are grateful to many people for their input and contributions to the project.

First, we would like to acknowledge our project officer, Orlando Gonzales, whose thoughtful review of the Framework and Toolkit, and other documents associated with the project, was invaluable. We are also grateful to many other PCORI leaders and staff, including Dr. Joe Selby, Ms. Jean Slutsky, Dr. Bridget Gaglio, Ms. Sue Sheridan, Ms. Susan Hildebrandt, Mr. William Silberg, Mr. Greg Martin, and Ms. Emily Gagola. We would also like to thank members of PCORI Engagement, Dissemination, and Implementation Committee who provided thoughtful feedback on the project.

We are grateful to the members of the Stakeholder Council who provided guidance and insights throughout the development of the Framework and Toolkit: Dr. Andrew Baskin, Dr. Kathleen Blake, Mr. Henry Claypool, Ms. Kristen Cox Santiago, Dr. Linda Cummings, Ms. Joyce DuBow, Dr. Newell McElwee, Ms. Marjorie Ginsburg, Dr. Jessie Gruman, Dr. George Isham, Dr. Marguerite Koster, Dr. Julie Kroviak, Dr. David Lansky, Dr. Sanne Magnan, Mr. Michael Millenson, Dr. Judy Mohr Peterson, Ms. Margaret Murray, Dr. Robert Phillips, Dr. Anne Sales, Dr. John Santa, Mr. Dwayne Spradlin, Mr. Gary Schwitzer, Dr. Elizabeth Yano, Mr. Richard Zaldivar, and Dr. Judy Zerzan.

The Framework and Toolkit could not have been completed without the work of many colleagues and friends not listed as authors but who made significant contributions. From Mathematica, Jennifer de Vallance provided leadership and guidance to enhance the presentation and content of the products and led the development of the Stakeholder Workshop. Adam Coyne and Dr. Nyna Williams provided feedback to us at many important points of this work. Dr. Sarah Forrestal coordinated stakeholder feedback activities on the Mathematica team and conducted data collection efforts. Amanda Lechner conducted stakeholder feedback activities and designed the layout of the documents. Rituparna Ganguly, Rebecca Gourevitch, Ananya Khan, Dr. Frank Martin, Julita Milliner-Waddell, Betsy Santos, and Abigail Zier contributed to the stakeholder feedback activities. Brigitte Tran designed the framework visual. Carmen Ferro, Christal Stone Valenzano, and many other staff managed plans for the Stakeholder Workshop. We are indebted to Heather Gordon, who managed the project budget, developed time lines, and organized project meetings.

We are appreciative for the contributions of our partners from AcademyHealth, WebMD, and Palladian Partners, who contributed in a number of ways and provided valuable feedback on the Framework and Toolkit. From AcademyHealth, which led the stakeholder feedback activities and drafted two spotlights, we thank Alison Rein, Kristin Rosengren, Dr. Lisa Simpson, and Kelsi Feltz. From WebMD, which recruited participants for patient, caregiver, and clinician webinars, we thank Jane Lowers, Matthew Holland, Steven Murphy, Keri Hooper, and Marc Rogers. Lastly, we thank our colleagues at Palladian Partners for working on the literature review and stakeholder feedback activities: Karen Eddleman, Amy Ewing, Catherine Harmon, Bethany Hoffman, Susan Keown, Donna Messersmith, Heather Pierce, Terry Taylor, and Laura Zeifang.

IN MEMORIAM

The team that developed the Dissemination and Implementation Framework and Toolkit for the Patient-Centered Outcomes Research Institute is grateful for the contributions of **Dr. Jessie Gruman**, who was a Stakeholder Council member and emphasized the importance of the patient perspective in her comments on this project. A tireless advocate for patients, Dr. Gruman passed away on **July 14, 2014**. As founder and president of the Center for Advancing Health, she was a **pioneer** in promoting patient engagement in health care. Dr. Gruman will be missed and never forgotten.

INTRODUCTION

U.S. healthcare organizations and agencies in the public and private sectors spend more than \$120 billion on research each year.¹ Yet stakeholders do not have enough information available to make relatively common, and some uncommon, decisions on the most effective treatments under particular circumstances or for particular patients. When evidence is available, it often takes a long time to use that information to make decisions.² Moreover, evidence is not always useful or might not address questions that decision makers need answered. Finding ways to **enhance awareness and knowledge of useful and relevant information** (*dissemination*) to help people and organizations make decisions and **put it into practice** (*implementation*) is the subject of this document and a companion toolkit.

Many Stakeholders for CER and PCOR

Throughout this document, stakeholders refers to **patients, caregivers, patient advocacy organizations, clinicians, clinician specialty societies, policymakers, healthcare delivery systems, payers, insurers, employers, purchasers, life sciences industry leaders, hospitals, funders, researchers, journal editors, training institutions, publishers, healthcare journalists, and bloggers**. That is, the term refers to all people and organizations with a stake in increasing the quantity, quality, and timeliness of useful, trustworthy information available to support health and healthcare decisions.

The Patient-Centered Outcomes Research Institute (PCORI) is an independent, nonprofit organization that funds and shares research that compares the effectiveness of various choices that patients, families, healthcare providers, and other stakeholders encounter. It aims to increase the quantity, quality, and timeliness of useful, trustworthy information available to support health decisions; speed the implementation and use of PCOR evidence; and influence research funded by others to be more patient-centered. To attain these goals, **stakeholder engagement is central** to all PCORI activities from topic selection to evaluation (Figure 1).

Figure 1. Stakeholder Engagement Is Central



PCORI sought to develop a dissemination and implementation (D&I) framework to **facilitate strategic planning** for sharing information and for putting new evidence into practice to speed change. In February 2014, PCORI enlisted a team led by Mathematica Policy Research to develop this Framework, and a companion Toolkit, through a review of the D&I literature in health and healthcare, discussions with D&I experts, and feedback from more than 300 people representing 15 stakeholder groups, including the Agency for Healthcare Research and Quality³ (AHRQ; for details on methods, see Toolkit Appendix B).

Dissemination and implementation of CER and PCOR warrant intensive planning effort because D&I activities do much more than simply promote evidence or support research endeavors. In contrast with communications intended to promote evidence, D&I activities are based on the needs of stakeholders, and they have the core goals of improving the understanding and awareness of evidence and facilitating use of evidence by decision makers. Effective dissemination and implementation are vital to the use of evidence to improve the healthcare system.

Dissemination and Implementation Start Before Findings Are Ready

Effective dissemination and implementation start at the point of research topic selection, as emphasized by stakeholders—long before research is conducted and evidence is ready to be shared. To understand the **needs of audiences** who will use evidence to make health and healthcare decisions, research must address **questions that are relevant** to those audiences. To that end, those individuals and organizations who may partner with PCORI to disseminate and implement evidence should be engaged as **partners from the beginning**.

The intended audience for the Framework is **PCORI leadership and staff, as well as members of PCORI advisory panels and committees**. However, it should also be valuable to many other health and healthcare entities, organizations, and agencies as well as healthcare purchasers that also disseminate and implement comparative effectiveness research (CER) or PCOR evidence, such as AHRQ, health delivery systems, payers, insurers, and other funders.

A Focus on CER and PCOR Evidence

The D&I Toolkit provides guidance and focuses on the dissemination and implementation of CER and PCOR that provide information on different health or healthcare choices, rather than other types of research, such as population health-level research or efficacy studies.

The particular type of evidence of interest to the planning efforts described in the Toolkit includes CER and PCOR **findings that have the potential to have considerable impact on health and healthcare decision making**.

Although *evidence* is the preferred term to describe CER and PCOR findings to disseminate and implement, related terms are also used. Evidence is variously referred to as *practices*, *programs*, *interventions*, and *innovations*; evidence can also be implemented in the form of *policies* and *guidelines*. These terms capture the variation in the complexity of evidence and reflect the terminology used in the literature and by the healthcare community.

DEFINING DISSEMINATION AND IMPLEMENTATION

A number of terms are synonymous with dissemination and implementation used in practice and the literature, with varying definitions and application. Through a review of common definitions in the peer-reviewed literature and input from stakeholders (see Toolkit Appendix D for more information), the following definitions were developed:

- **Dissemination** is the intentional, active process of identifying target audiences and tailoring communication strategies to increase awareness and understanding of evidence, and to motivate its use in policy, practice, and individual choices.
- **Implementation** is the deliberate, iterative process of integrating evidence into policy and practice through adapting evidence to different contexts and facilitating behavior change and decision making based on evidence across individuals, communities, and healthcare systems.

Dissemination and implementation are overlapping and distinct. The processes influence each other because knowledge and awareness of the evidence will influence its use. They also share the goal of encouraging the **use of evidence in individual decision making, policy, and practice**; both involve **stakeholder engagement and partnerships** with people and organizations, and are enhanced through ongoing **evaluation**. The processes are distinct in

Stakeholder engagement in dissemination and implementation is a **continuation of the process of engagement** that begins with the selection of priorities for PCORI-funded research and the development and review of PCORI-funded projects.

that dissemination focuses on spreading knowledge of evidence and informing audiences about new evidence and treatment choices, whereas implementation builds on that knowledge by **considering evidence in context** and developing appropriate strategies to facilitate and routinize the use of evidence.

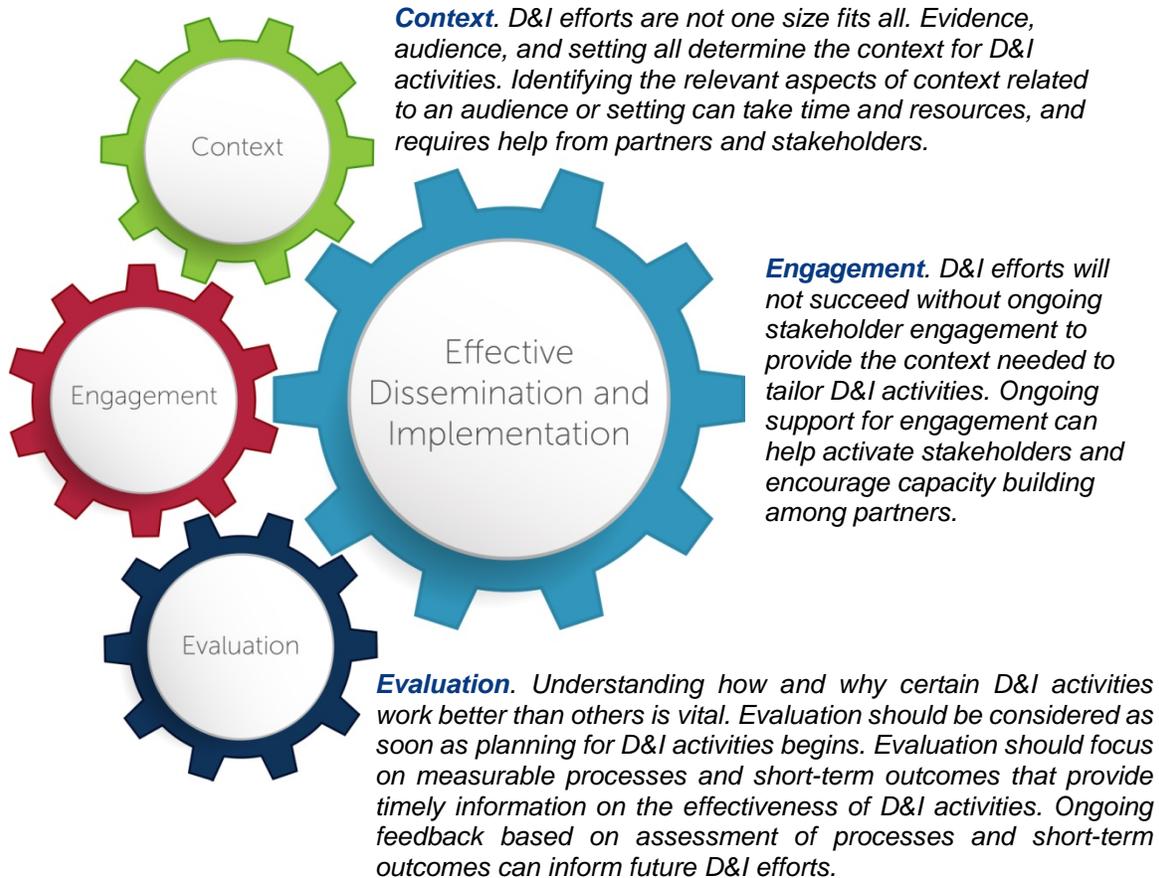
An adequately resourced multidisciplinary team is needed to plan and implement D&I strategies for them to be successful. Such a team could, at

the minimum, include program management staff employed by PCORI to steward the D&I process, stakeholders with relevant expertise to provide context to D&I activities, communications experts to help shape messages to target audiences, implementation experts to provide context for the evidence for adopters, and evaluation experts to help identify how to assess the effects of D&I activities. The mix of experts and stakeholders will vary from one effort to the next because the goals and needs will vary with the evidence being shared. Ideally, stakeholder engagement in dissemination and implementation is a continuation of the process of engagement that begins in the development and review of PCORI-funded projects and in the selection of priorities for PCORI-funded research. By engaging stakeholders from the beginning, stakeholders provide PCORI and its partners with **input to shape and support** the D&I activities that come later. Although speeding the implementation and use of PCOR and CER evidence is one of three PCORI strategic goals, putting evidence into practice on a broad scale is not part of its mission. However, PCORI can potentially facilitate implementation in several ways, such as providing technical assistance to organizations conducting implementation activities.

PRIMARY TAKEAWAY POINTS

Three concepts fundamental to effective dissemination and implementation inform the recommendations and action steps included here and in the Toolkit: context, engagement, and evaluation. The literature identifies them as vital to success. Stakeholders emphasized context and engagement as fundamental, but identified evaluation of D&I efforts as less salient to success noting that it was often not conducted due to resource constraints. PCORI and its partners should account for these concepts on an ongoing basis when developing a dissemination or implementation strategy. As they develop plans, PCORI and its partners should remind themselves that **context matters** and all efforts are not one size fits all particularly when underserved populations are the subjects of research;⁴ **engagement is central** to success in the planning and execution of D&I activities;^{5,6} and **evaluation of those activities is necessary** to inform subsequent D&I efforts as to how and why behavior, practice, or policy changed.^{7,8} Figure 2 summarizes these concepts.

Figure 2. Concepts Fundamental to Effective Dissemination and Implementation



THE FRAMEWORK

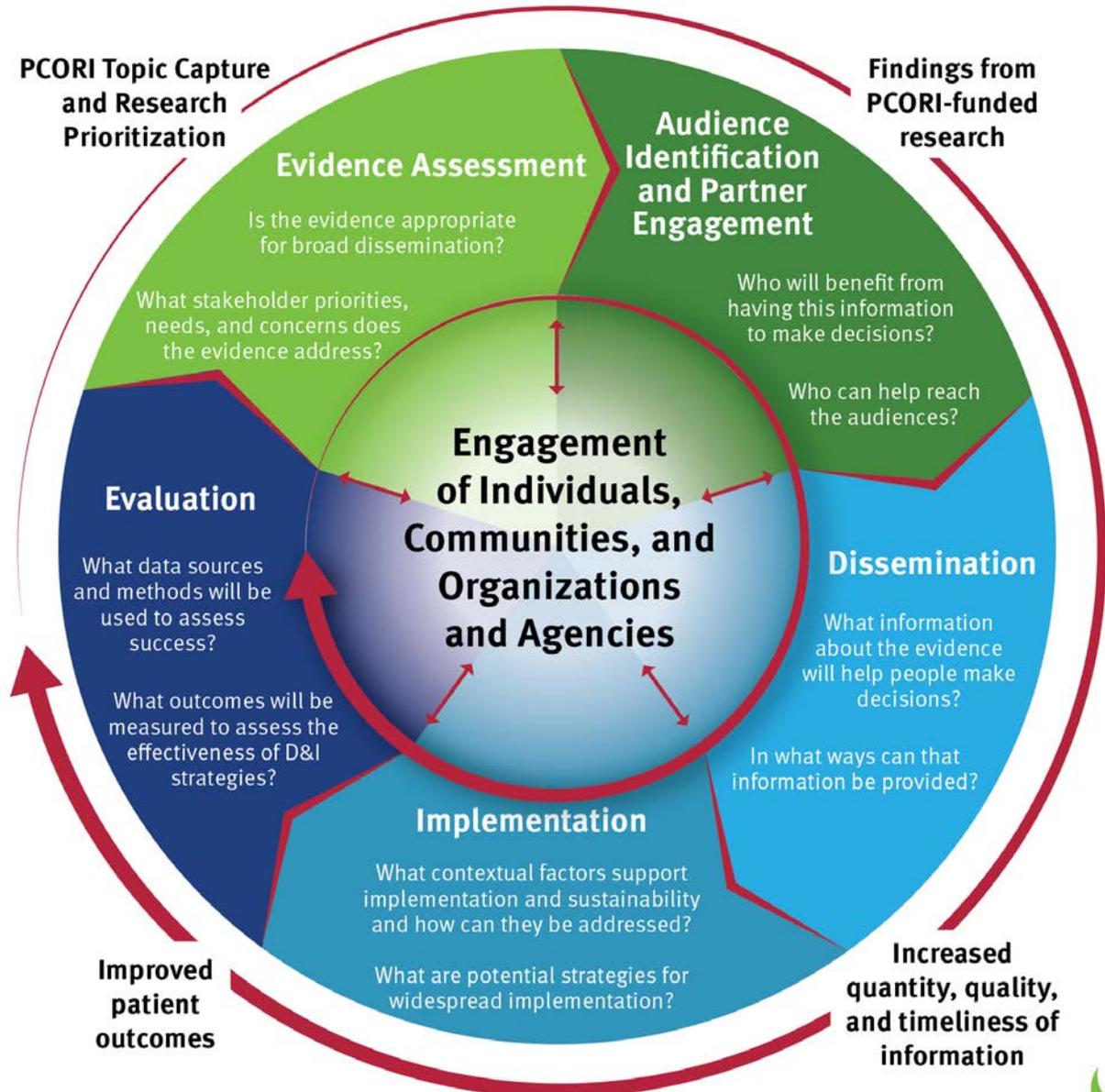
There are several models and frameworks that represent dissemination or implementation separately or consider a single context such as health systems or public health settings (see Toolkit Appendix E). This Framework incorporates aspects of existing models to understand dissemination and implementation within the context of PCORI's strategic goal to speed the adoption of PCOR. The fundamental characteristics of PCOR—stakeholder-informed research that brings real-world relevance and the study of the effectiveness of options for diverse decision makers—helped to guide the development of the Framework. Figure 3 provides a representation of the Framework, highlighting the process of dissemination and implementation as iterative and the foundational questions and challenges that PCORI and its partners will encounter when developing D&I efforts.

The core components of this Framework include *Evidence Assessment* and *Audience Identification and Partner Engagement, Dissemination, Implementation, and Evaluation*. A review of the peer-reviewed and grey healthcare literature, interviews, webinars, and focus groups with more than 300 people from 15 stakeholder groups identified these components and the primary questions and challenges. The primary takeaways include:

- **Engagement is central.** To achieve its goal of accelerating the use of PCOR in health and healthcare decision making, PCORI should actively engage all types of stakeholders. This engagement begins at the priority-setting stage so that stakeholders provide input on relevant research and become partners in the execution of research and dissemination of findings. Engagement is most effective when it is bi-directional, with stakeholders providing input and feedback to PCORI and receiving information in turn.
- **D&I plans should address primary questions and challenges.** Each component of the Framework poses two fundamental challenges in the form of questions. These should frame plans at the start of a D&I effort and serve as a validity check when an initial draft of a plan is complete.
- **The D&I process is iterative.** Lessons learned by PCORI, its partners, and stakeholders from planning and conducting D&I activities should inform subsequent efforts.
- **Dissemination and implementation build upon existing initiatives.** D&I efforts occur concurrent to and build upon other research and foundational activities, such as PCORI's topic capture, stakeholder engagement work, and peer-review process. The identification of target audiences and the formation of partnerships, for instance, begin at the priority-setting stage, as emphasized by stakeholders that provided feedback. The Framework emphasizes that when evidence is assessed, additional work to refine target audiences and engage partners should occur.

PCORI research addresses a large number of topics, settings, and populations, and is relevant to a broad array of stakeholders. As such, the processes through which evidence is adopted will vary by context or setting and type of evidence. Consequently, the Framework does not identify any one behavioral change or logic model for dissemination and implementation.

Figure 3. A Framework for the Dissemination and Implementation of Patient-Centered Outcomes Research



FOUNDATIONAL ELEMENTS OF PCORI D&I

Effective D&I activities are predicated on strong foundational or infrastructure elements that are directly associated with the concepts of engagement, context, and evaluation. PCORI should develop this infrastructure in collaboration with other organizations and stakeholders to ensure that the foundation for D&I activities is relevant to its partners and stakeholders.

Develop a Network of Organizational Partners

PCORI should foster ongoing collaboration with organizational partners at the community, regional, and national levels that can bring knowledge of context, experience addressing the audiences' needs, and the potential to become a distribution network for PCOR.^{9,10} A network should be **diverse** and include partners from, but not limited to, healthcare delivery systems, hospitals, insurers, patient advocacy organizations, clinician associations, purchasers, journalists, and life sciences companies, building on existing relationships developed by PCORI engagement staff. Partners could include groups not directly associated with the healthcare sector, such as the National Governors' Association or the Urban League, which can **collaborate to identify** research topics relevant to and share PCOR with audiences.

Establish a Dissemination Advisory Panel

Stakeholder engagement is essential to achieving D&I goals and should begin with topic selection so that research is informed by members of the target audiences who may use it. To enhance engagement in dissemination and implementation, PCORI could establish a dissemination advisory panel whose members are **partners** in the development and conduct of D&I activities, unlike the Advisory Panel on Communication and Dissemination whose members will advise on research. The panel could include representatives from all stakeholder groups, including people who have participated in PCORI-funded research and agents from organizational partners. Panel members could serve on committees to review the progress of research, validate evidence before dissemination, and help make dissemination relevant to audiences. Members of this panel can be conduits or ambassadors for PCOR and connect directly to audiences to encourage use of new evidence in partnership with PCORI.^{9,10}

Establish a D&I Repository of Information

Lessons from past D&I efforts can inform future ones if those learnings are documented systematically. To facilitate this, PCORI could establish a D&I repository so that **successful practices are replicated and unsuccessful practices are avoided**. This curated information could inform all facets of D&I planning and execution, from evidence assessment to evaluation. As identified by stakeholders, PCORI could also contextualize and synthesize new and existing evidence so that others can identify successful practices.

Identify Ways to Partner with AHRQ

PCORI and AHRQ have a unique opportunity to collaborate due to AHRQ's existing infrastructure and role as a disseminator of PCOR and PCORI's mission to increase the quantity, quality, and timeliness of information. Although PCORI and AHRQ leadership should formalize the details of collaborative activities, the organizations could benefit from each other's expertise and knowledge by engaging stakeholders and organizational partners; collaborating on evidence assessment; and developing a D&I repository.

EVIDENCE ASSESSMENT

Planning for dissemination and implementation requires the assessment of the quality of evidence generated by new and existing research and the context in which D&I activities might occur. The primary questions and challenges to be addressed when assessing evidence include: ***Is the evidence ready for use and adoption now? What stakeholder priorities, needs, and concerns does the evidence address?***

Engage Stakeholders to Help Assess the Evidence

Many kinds of stakeholders can help assess the usefulness and relevance of PCOR evidence and determine whether it warrants broad dissemination. Stakeholders whom PCORI could engage include members of the dissemination advisory panel, study participants, partners, and other stakeholders, such as investigators who conducted the research. The exact number and mix of stakeholders will depend on the type of evidence being assessed, but the group should include all relevant stakeholders to lend the evidence **legitimacy among potential target audiences**. The assessment of evidence is a particularly important opportunity to engage representatives of underserved or traditionally vulnerable groups as these groups are the focus of much PCORI-funded research and typically do not have a voice in determining the relevancy of evidence.

Develop a Process to Assess Whether Broad or Limited Dissemination Is Appropriate

The PCORI Methodology Committee will help PCORI leadership develop criteria to assess the quality of evidence. Any evidence assessment process that PCORI might develop should include input and feedback from stakeholders. Evidence may ultimately be classified into one of two high-level categories: broad or limited dissemination. Primary considerations for an evidence assessment process include:

- **Determine how the evidence relates to existing evidence.** Consider the evidence in the context of other CER or PCOR to identify where and how the new evidence contributes.
- **Determine why the evidence matters to patients, other stakeholders, health policy, and practice.** Collect feedback from stakeholders on the value of the evidence to health policy and practice.
- **Anticipate barriers to use in decision making.** Consider potential barriers to dissemination and the use of the evidence, such as reactions to the evidence due to previously held beliefs or practice and potential costs.

AUDIENCE IDENTIFICATION AND PARTNER ENGAGEMENT

Identifying audiences and engaging partners is fundamental to D&I planning and builds upon existing efforts by PCORI that begin as early as the selection of research topics. To refine audience identification and partner engagement, PCORI and its partners should address: ***Who will benefit from having this information to make decisions? Who can help reach the audiences?***

Engage Stakeholders to Help Identify the Audience and Partners

PCORI can seek stakeholder input to identify the appropriate audiences and recruit the most effective partners for reaching them. Engaging stakeholders is an opportunity to build on their **existing connections, knowledge, and practical perspectives** and can enhance PCORI's audience identification and partner engagement efforts. This creates a strong foundation for subsequent D&I activities as these stakeholders can help spread the word about PCOR.

Identify Target Audiences with the Potential to Adopt Evidence

Identifying appropriate target audiences is essential to effective dissemination and implementation. For example, audiences may include clinicians and patients choosing among treatment options; the leadership or staff of a health system developing new regulations or processes; or insurance company executives responsible for provider reimbursement decisions. Depending on the goals of dissemination and implementation specific to the evidence being considered, the audience may include multiple groups with varying needs.

Identify Partners That Can Help Reach the Audience

Partners can help reach and provide in-depth knowledge of audiences to enhance the effectiveness and appropriateness of dissemination. This is particularly true for underserved or traditionally vulnerable groups.^{11,12} Effective partners have access to the audience and are viewed as **credible and trustworthy**. Partners can include patient advocacy organizations, clinician specialty associations, a provider of continuing medical education, or other organizations, depending on the evidence and the target audiences. The importance of partners highlights the need for considering dissemination and implementation at the topic selection stage—well before evidence is generated.

Establish the Roles of PCORI and Its Partners

PCORI's involvement in the execution of a particular D&I effort can be placed on a continuum that has more work being conducted by partners on one end and a more central role for PCORI on the other. How collaboration and coordination occur depends on **factors unique to each situation**. These factors include the evidence, the audience, potential partners, PCORI's relationships with those partners, the resource-intensiveness of dissemination tactics, and the partners' resources and ability to conduct dissemination activities.

Identify the Audiences' Needs, Values, Motivations, and Expectations

In seeking to share new healthcare evidence, PCORI and its partners should understand the needs, values, motivations, and expectations of the target audiences: these characteristics shape the messages about the evidence and the dissemination methods. Communication can be shaped based on the ways the audiences access information and the information sources the **audiences perceive as credible**. It should also be linguistically and culturally appropriate and take account of the literacy and numeracy of audiences. A D&I strategy should identify the methods to reach audiences, the timing of when they can act on information, ways to tailor information for audiences, and audience-specific barriers to receiving information or influencing decision makers.

Assess the Context for Adoption

The more PCORI and its partners know about context, the greater the likelihood of influencing decisions, practice, or policy. Contextual factors have varying degrees of influence over the willingness of a target audience to adopt PCOR findings.⁴⁷ Environmental factors that facilitate adoption might include a **business case for change**, available resources to implement change, and openness to learning. Barriers could include previous reliance on conflicting evidence, lack of resources, lack of an **advocate for change or champion**, or lack of alignment to existing individual priorities or organizational missions.

Determine the Incentives Necessary for Change

Identifying incentives can help PCORI facilitate adoption of evidence and inform D&I strategies.¹³⁻¹⁵ For each D&I effort, PCORI should determine whether incentives for change already exist or are lacking, can be amplified by D&I partners, or barriers to change are significant. An important aspect of laying the groundwork for incentives is to explore whether the benefits of adoption outweigh the costs to a participating entity. Many end users will want to know about **the resources necessary to adopt the evidence** and the financial advantages or disadvantages to changes or **opportunity costs associated with adoption**. When there is a cost-benefit case for adoption, the need for formal incentives might be smaller because the tradeoffs will be more apparent to decision makers.

DISSEMINATION

Dissemination is intentional and active; it involves identifying target audiences and tailoring communication strategies. Effective dissemination planning starts by addressing: ***What information about the evidence will help people make decisions? In what ways can that information be provided?***

Engage Stakeholders in Planning and Executing Dissemination

PCORI should engage stakeholders, including partners that can lead dissemination activities and decision makers and leaders who must be aware of the evidence to consider adoption, in the design and execution of dissemination plans to enhance their effectiveness. In addition, PCORI must be sure to **engage stakeholders that represent the target audiences**, particularly when the audiences include underserved populations.

Define Dissemination Goals and Plan the Dissemination Strategy

PCORI and its partners should identify the pertinent messages about the evidence and the relevant channels or modes for reaching target audiences. The starting point is to **define clear goals** for whom to reach as well as for their awareness, knowledge of, and use of evidence. PCORI and its partners should also identify facilitators and barriers to adoption within each specific context or setting to develop a strategy to mitigate them. Outcomes to monitor dissemination, such as increased knowledge of the evidence, should also be defined.

Choose Dissemination Tactics

Dissemination tactics consist of efforts to reach audiences and tailor the messages and modes to those audiences' needs and preferences. Message content and its delivery should make use of a variety of media and modes because **tailored approaches** are more effective than broad efforts and **multifaceted strategies** are more effective than single-source strategies.^{7, 16} PCORI and its partners should engage individuals and organizations with expertise in specific tactics.

Make the Case for the Evidence

PCORI and its partners should develop messages that are relevant to target audiences and should collaborate with messengers who are **trusted by and influential to** the target audiences.¹¹ The case should be specific to each target audience, be personal to end users, and appeal to end users' goals.^{4, 5} When the audience includes healthcare organizations, messages should align with organizations' goals and missions.

Enhance the Accessibility and Usability of the Evidence

Dissemination tactics are most effective when the evidence is easy to interpret and use.¹⁷ Strategies that support use, such as practical tools, are more effective than educational materials alone.^{4, 16, 18} PCORI and its partners can make evidence more usable by developing tools aimed at improving knowledge required to use the evidence. These tools can be adapted by partners to meet the needs of specific audiences through feedback from stakeholders.

IMPLEMENTATION

Implementation is context-specific, follows the decision to adopt the evidence, and is tailored to specific goals related to the use of the evidence. When considering implementation PCORI and its partners should address: ***What contextual factors support implementation and sustainability and how can they be addressed? What are potential strategies for widespread implementation?***

Engage Stakeholders Who Can Influence Adoption Among End Users

PCORI should collaborate with stakeholders—such as payers, healthcare delivery system leaders, employers, and clinical specialty associations—who can facilitate adoption by influencing target audiences to incorporate the evidence into practice. This collaboration begins at the topic selection stage and should also include stakeholders such as policymakers who often lack the information needed to make decisions at the programmatic level. Although PCORI might not have direct relationships with end users, it can facilitate adoption by partnering with stakeholders that can both **engage end users and influence their use of the evidence**. PCORI might also rely on members of the dissemination advisory panel to help connect with end users and champions recognizable to end users at the national, regional, and local levels.

Provide Technical Assistance

PCORI can collaborate with stakeholders to systematically assess local contexts to facilitate adoption across settings. No single study or small number of studies can take all potential implementation contexts into account, and implementing interventions in settings that were not represented in the original research might be inappropriate or harmful. This is particularly true when translating evidence from or into settings specific to underserved populations. Moreover, organizational leaders might be more willing to support change if information is available about how to adapt evidence to their local contexts. Providing technical assistance related to piloting and replication can also help PCORI ensure that demonstrations or pilots are designed to provide timely feedback, assessed in similar ways, yield more reliable evidence about interventions, and foster sustainability.⁷

Facilitate the Use of Multipronged Strategies

PCORI and its partners can assist adopters by helping them to address the challenge of identifying an appropriate combination of implementation strategies. Strategies described in the literature can be classified into six broad domains: planning, education, financial, restructuring, quality management, and attention to policy context.¹⁹ Using combinations of these strategies to drive change among stakeholders at different levels (individual, community, or system) enhances the likelihood of success. Identifying appropriate multipronged strategies can also help address challenges such as implementing new practices into existing workflows, demonstrating a business case for change, and identifying the benefit for patients' health. In many cases, PCORI and its partners might rely on experts in the field who have had success to inform the choice of specific strategies.

EVALUATION

Evaluation of D&I activities identifies effective mechanisms for change, contributing to an evidence base for selecting D&I strategies. Any evaluation plan should address: *What data sources and methods will be used to assess success? What outcomes will be measured to assess the effectiveness of D&I strategies?*

Engage Stakeholders Throughout the Evaluation

PCORI and its partners should work with stakeholders to design and conduct evaluation activities. Stakeholders should include representatives of the populations of interest and others involved in healthcare decision making. Stakeholders should be consulted on the identification of evaluation goals, selection of metrics and data sources, and interpretation of findings.

Make Plans for the Evaluation of D&I Activities

Planning the evaluation of D&I activities requires identifying processes and outcomes that are expected to change when audiences learn about the evidence. Evaluations of D&I activities are inherently more formative than outcomes-based evaluations because outcomes associated with behavioral change or structural or process changes that stakeholders care about can take considerable time to change. All plans should also include the ability to monitor for unintended consequences and consider the resources and expertise needed to assess the D&I activities, particularly if evaluations are large.

Collect Information in Different Ways, Using Multiple Data Sources

A number of factors drive the selection of data and the study design, such as the setting, desired metrics, feasibility, and financial resources available. Evaluation of D&I strategies often requires both quantitative and qualitative data and methods, particularly when it might be difficult to attribute outcomes to the intervention.²⁰ Qualitative data can provide insight into not only what happened but also how and why; qualitative data are also useful for early assessments of dissemination or implementation and when quantitative data are limited. Using multiple sources of data is often important when evidence involves underserved groups because existing databases may be insufficient.

Identify Valid and Reliable Metrics for Process and Outcome Measures

Successful evaluation of D&I activities requires defining processes, expected short-term outcomes, and desired long-term outcomes, and identifying reliable and valid metrics and measures to assess them.²⁰ Because the number of metrics or measures can be large, PCORI and its partners should consider constraints such as time, staff, financial resources, and the availability of data to identify the most appropriate metrics or measures. Metrics and measures should be **easy or feasible to collect and sensitive to change** and, where appropriate, be patient-centered and measured at multiple points in time.

NEXT STEPS IN DISSEMINATION AND IMPLEMENTATION

Accelerating the use of patient-centered outcomes research cannot happen without action. PCORI and its partners should consider and plan its immediate next steps in dissemination and implementation to begin the process of speeding the use of CER and PCOR to inform health and healthcare decisions. Specific next steps could include the following:

- **Build a network of organizational partners.** Collaborating with partners can provide essential information about target audiences and local settings needed to tailor messages about evidence. Through a partnership with AHRQ, which has developed a network of regional and national partners, PCORI could develop the tools necessary to share information on CER and PCOR using methods familiar to partners and trusted by audiences.
- **Establish a dissemination advisory panel.** Establishing the makeup of a panel, how members would work with PCORI, and resources for engagement are necessary steps. The panel ideally would include members from all stakeholder groups so that all perspectives are represented.
- **Establish a process to assess if broad dissemination is appropriate.** Ideally, the process would identify how findings from PCORI-funded projects relate to existing evidence, meet stakeholder needs, and are relevant to target audiences through stakeholder engagement. Such a process could be developed by the PCORI Methodology Committee and stakeholders such as AHRQ and other healthcare organizations that assess evidence that they might adopt to inform decision making.
- **Build on existing efforts to synthesize D&I lessons.** AHRQ and other agencies are developing and curating resources to synthesize evidence on dissemination and implementation. Through a D&I repository, PCORI could capitalize on these efforts and contribute to the knowledge base.
- **Test the process.** Whether the process for developing a D&I plan is useful to PCORI and its partners can be assessed only by testing it and then documenting how well it works to build a base of D&I knowledge that informs future efforts. In addition, PCORI should also consider beginning the process of evaluating the D&I activities that it or its partners conduct to inform subsequent D&I plans.

Decision makers need useful information that is relevant to health and healthcare decisions they make every day. To generate that information from research that it funds and effectively increase understanding and awareness of evidence, PCORI must engage stakeholders as partners in research starting at topic selection. In this way, PCORI can ensure the relevancy of its research in helping target audiences make real-world choices and improve the likelihood of speeding the implementation of PCOR by decision makers when it comes time to disseminate it. When evidence is ready, the action steps identified in the Framework and Toolkit can help PCORI and its partners navigate the complexities of dissemination and implementation.

REFERENCES AND NOTES

- ¹Research!America. “Truth and Consequences: Health R&D Spending in the U.S. (FY11-12); Overall Gains Tempered by Stagnant Funding and Reclassifications.” Alexandria, VA: Research!America, 2013. Available at <http://www.researchamerica.org/uploads/healthdollar12.pdf>. Accessed July 14, 2014.
- ²Balas, E.A., and S.A. Boren. “Managing Clinical Knowledge for Health Care Improvement.” In *Yearbook of Medical Informatics 2000: Patient-Centered Systems*, edited by J. Bommel and A.T. McCray. Stuttgart, Germany: Schattauer Verlagsgesellschaft mbH, 2000, pp. 65–70.
- ³In section 937, the Patient Protection and Affordable Care Act of 2010 states “(1) Dissemination.--The Office of Communication and Knowledge Transfer (referred to in this section as the ‘Office’) at the Agency for Healthcare Research and Quality (or any other relevant office designated by Agency for Healthcare Research and Quality), in consultation with the National Institutes of Health, shall broadly disseminate the research findings that are published by the Patient Centered Outcomes Research Institute established under section 1181(b) of the Social Security Act (referred to in this section as the ‘Institute’) and other government-funded research relevant to comparative clinical effectiveness research.”
- ⁴Pentland, D., K. Forsyth, D. Maciver, M. Walsh, R. Murray, L. Irvine, and S. Sikora. “Key Characteristics of Knowledge Transfer and Exchange in Healthcare: Integrative Literature Review.” *Journal of Advanced Nursing*, vol. 67, no. 7, July 2011, pp. 1408–1425.
- ⁵Greenhalgh, T., G. Robert, F. Macfarlane, P. Bate, and O. Kyriakidou. “Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations.” *Milbank Quarterly*, vol. 82, no. 4, 2004, pp. 581–629.
- ⁶Glasgow, R.E., C. Vinson, D. Chambers, M.J. Khoury, R.M. Kaplan, and C. Hunter. “National Institutes of Health Approaches to Dissemination and Implementation Science: Current and Future Directions.” *American Journal of Public Health*, vol. 102, no. 7, July 2012, pp. 1274–1281.
- ⁷Brownson, R.C., G.A. Colditz, and E.K. Proctor. “Dissemination and Implementation Research in Health: Translating Science to Practice.” New York: Oxford University Press, 2012.
- ⁸Neta, G. R.E. Glasgow, C.R. Carpenter, J.M. Grimshaw, B.A. Rabin, M.E. Fernandez, and R.C. Brownson. “A Framework for Enhancing the Value of Research for Dissemination and Implementation.” *American Journal of Public Health*, vol. 105, no. 1, January 2015, pp. 49-57.
- ⁹Partnership to Improve Patient Care (PIPC). “PIPC and Families USA Roundtable: Summary and Recommendations.” Washington, DC, August 2014. Available at <http://www.pipcpatients.org/resources-detail.php?id=295#.VHtWzMlO5ok>, accessed on September 21, 2014.

- ¹⁰Kreuter, M.W., C.M. Casey and J.M. Bernhardt. “Enhancing Dissemination through Marketing and Distribution Systems: A Vision for Public Health.” In *Dissemination and Implementation Research in Health: Translating Science to Practice*, edited by Ross Brownson, Graham Colditz, and Enola Proctor. New York: Oxford University Press, 2012.
- ¹¹Nápoles, A.M., J. Santoyo-Olsson, and A.L. Stewart. “Methods for Translating Evidence-Based Behavioral Interventions for Health-Disparity Communities.” *Preventing Chronic Disease*, vol. 10, 2013, p. E193.
- ¹²Kreuter, M.W., T.D. McBride, C.A. Caburnay, T. Poor, V.L. Sanders Thompson, K.S. Eddens, S. Rath, H. Perkins, and C. Casey. “What Can Health Communication Science Offer for ACA Implementation? Five Evidence-Informed Strategies for Expanding Medicaid Enrollment.” *Milbank Quarterly*, vol. 92, no. 1, 2014, pp. 40–62.
- ¹³Perla, R.J., E. Bradbury, and C. Gunther-Murphy. “Large-Scale Improvement Initiatives in Healthcare: A Scan of the Literature.” *Journal of Healthcare Quality*, vol. 35, no. 1, 2013, pp. 30–40.
- ¹⁴Damschroder, L.J., D.C. Aron, R.E. Keith, S.R. Kirsh, J.A. Alexander, and J.C. Lowery. “Fostering Implementation of Health Services Research Findings into Practice: A Consolidated Framework for Advancing Implementation Science.” *Implementation Science*, vol. 4, August 7, 2009, p. 50.
- ¹⁵Dearing, J.W. “Applying Diffusion of Innovation Theory to Intervention Development.” *Research on Social Work Practice*, vol. 19, no. 5, September 1, 2009, pp. 503–518.
- ¹⁶Grimshaw, J.M., M.P. Eccles, J.N. Lavis, S.J. Hill, and J.E. Squires. “Knowledge Translation of Research Findings.” *Implementation Science*, vol. 7, May 2012, p. 50.
- ¹⁷Yuan, C.T., I.M. Nembhard, A.F. Stern, J.E. Brush, Jr., H.M. Krumholz, and E.H. Bradley. “Blueprint for the Dissemination of Evidence-Based Practices in Healthcare.” Commonwealth Fund Issue Brief, no. 86, 2010, pp. 1–16.
- ¹⁸Franklin, C., and L.M. Hopson. “Facilitating the Use of Evidence-Based Practice in Community Organizations.” *Journal of Social Work Education*, vol. 43, no. 3, fall 2007, pp. 377–404.
- ¹⁹Powell, B.J., J.C. McMillen, E.K. Proctor, C.R. Carpenter, R.T. Griffey, A.C. Bunger, J.E. Glass, and J.L. York. “A Compilation of Strategies for Implementing Clinical Innovations in Health and Mental Health.” *Medical Care Research and Review*, vol. 69, no. 2, April 2012, pp. 123–157.
- ²⁰Proctor, E., H. Silmere, R. Raghavan, P. Hovmand, G. Aarons, A. Bunger, R. Griffey, and M. Hensley. “Outcomes for Implementation Research: Conceptual Distinctions, Measurement Challenges, and Research Agenda.” *Administration and Policy in Mental Health*, vol. 38, no. 2, March 2011, pp. 65–76.

www.mathematica-mpr.com

Improving public well-being by conducting high quality,
objective research and data collection

PRINCETON, NJ ■ ANN ARBOR, MI ■ CAMBRIDGE, MA ■ CHICAGO, IL ■ OAKLAND, CA ■ WASHINGTON, DC

MATHEMATICA
Policy Research

