

Issue BRIEF

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Accelerating the Implementation and Sustainability of Patient-Centered Outcomes Research

The United States makes major investments in comparative effectiveness research (CER) and patient-centered outcomes research (PCOR) to increase the quality, efficiency, and patient-centeredness of health care and thereby improve population health. Through CER and PCOR, researchers seek to (1) measure the effectiveness of various clinical, delivery system, policy, or public health interventions by evaluating the outcomes that matter to patients and providers, (2) determine the comparative effectiveness and feasibility of these interventions in the current policy and practice environment, and (3) tailor interventions to diverse patient populations (Glasgow and Steiner 2012). Disseminating evidence and putting it into practice can be accelerated by engaging stakeholders and attending to the context in which implementation occurs; therefore, CER and PCOR uniquely hold the promise of producing evidence that is more readily usable by and relevant to various stakeholders. CER and PCOR evidence, however, is being generated during a time of rapid transformation in the health care system, when an unprecedented amount of information is available to inform practice, policy, and individual decision making (Gabriel and Normand 2012). With this proliferation of information at a time of transformation, it is critical to understand how to disseminate and implement CER and PCOR evidence most effectively. This brief offers a framework for the implementation and sustainability of CER and PCOR evidence in practice.

IMPLEMENTING AND SUSTAINING CER AND PCOR: A CONCEPTUAL FRAMEWORK

Fulfilling the promise of CER and PCOR to achieve improved health outcomes will depend on effective implementation and sustainability strategies. Figure 1 presents a conceptual framework of implementation and sustainability for CER and PCOR that is built around a core of stakeholder engagement. This framework

expands on the work of others and encompasses three fundamental concepts in implementation: (1) the need to keep stakeholders engaged throughout the process, (2) the critical role of context, and (3) the importance of monitoring and evaluation (Chambers et al. 2013; Scheirer and Dearing 2011; Powell et al. 2011; Proctor et al. 2011; Schell et al. 2013; Neta et al. 2014; Esposito et al. 2014). Stakeholders can be a critical source of information and resources to support implementation, and their ongoing

ASSESS THE EVIDENCE FOR IMPLEMENTATION AND PLAN FOR SUSTAINABILITY

- What factors—at the individual, organizational, health care system, and broader environmental levels—could support or prevent the use of evidence?
- Whom can we engage to learn more about these factors?
- What capacities and resources are currently available to support sustainability, and where are the gaps in support?

Implementing and sustaining CER and PCOR: a conceptual framework



Figure 1

ADAPT THE EVIDENCE TO FIT THE IMPLEMENTATION CONTEXT

- What existing information can help us distinguish the essential from the adaptable components of the evidence?
- What assessment tools will we use to assess the fit between the evidence and the implementation context?
- Based on these assessments, how will we adapt the parts of the evidence that can be adapted in order to improve its fit or appropriateness for the implementation context and patient population?

commitment and partnership can promote sustainability. Further, the implementation context is multileveled and complex, because individual adopters function in organizations that make up health systems and communities, all influenced by a broader sociopolitical and economic environment. The multilevel nature of the implementation context requires strategies that target these multiple levels concurrently and that evolve as the context evolves (Mendel et al. 2008; Chambers et al. 2013). Finally, monitoring and evaluating an implementation can help inform (1) the continued use of evidence, (2) any needed refinements to the evidence or the strategies used to encourage its use, and (3) strategies that reinforce sustainability of the evidence. For each component of the framework, we present questions to inform planning efforts.

1. ASSESS THE EVIDENCE FOR IMPLEMENTATION AND PLAN FOR SUSTAINABILITY

Planning for sustainability should be part of the process of assessing the evidence for implementation. Early planning efforts should employ frameworks and tools to understand the implementation context and the factors that are likely to influence implementation at the individual, organizational, delivery system, and

broader environmental levels. Further, assessing the capacity for sustainability should take place at the onset of implementation.

2. ADAPT THE EVIDENCE TO FIT THE IMPLEMENTATION CONTEXT

Assessing the fit between evidence and the context in which implementation takes place is a critical step toward promoting sustainability (Chambers et al. 2013). Feasibility studies, community needs assessments, and program planning models such as the PRECEDE-PROCEED Planning and Evaluation Model are examples of approaches that can be used to assess the fit between evidence and context and to identify issues that are likely to impact an implementation's effectiveness. Adapting an intervention to a given context can improve its appropriateness for and fit with the context, which in turn promotes sustainability (Schell et al. 2013; Stirman et al. 2013). For example, implementers may adapt the content of the intervention to accommodate the linguistic or cultural needs of certain patient populations. Thus, after assessing the evidence-context fit, implementers can identify the adaptations they need to make to the evidence to improve its fit with local circumstances while maintaining fidelity to its essential elements (Nápoles et al. 2013).

CHOOSE STRATEGIES THAT ADDRESS THE MULTILEVEL CONTEXT OF IMPLEMENTATION

- What are the barriers to using evidence, and what strategies can we use to overcome them?
- What are the incentives or disincentives for using evidence at the individual, organizational, health system, and broader environmental levels?
- What are the existing opportunities to align strategies with concurrent policies or programs, and how can we coordinate with our partners to support this alignment?

MONITOR IMPLEMENTATION AND CONTEXT AND REFINE STRATEGIES ACCORDINGLY

- What outcomes are important to our stakeholders, and what is the most important level or unit of analysis (for example, individual adopters) we can use to measure these outcomes?
- What changes in the internal setting—where implementation takes place—and the external environment could affect the use of evidence, and how should we refine our strategies as time passes?
- How we will decide how to refine our strategies given the findings of formative and impact evaluations?

Examples of frameworks and tools to inform implementation and sustainability:

- Replicating Effective Programs Framework (Kilbourne et al. 2007)
- Comprehensive Integrated Checklist of Determinants of Practices (Flottorp et al. 2013)
- Program Sustainability Assessment Tool (Schell et al. 2013)

3. CHOOSE STRATEGIES THAT ADDRESS THE MULTILEVEL CONTEXT OF IMPLEMENTATION

Implementation strategies are educational and behavioral interventions to encourage the consistent, appropriate use of evidence (Proctor and Brownson 2012). There are several taxonomies of implementation strategies, ranging from educating individual adopters to changing regulations and policies (see the Department of Health and Human Services' National Quality Strategy levers; Powell et al. 2012). The concurrent use of multiple strategies, however, is more likely to be effective than the use of singular or disparate strategies. Concerted strategies that address the multiple levels of implementation can help to align incentives and build capacity for use of the evidence. CER and PCOR focus in part on the multifaceted role of context in outcomes. Information about the context or circumstances in which the evidence is effective can inform the implementation of the evidence for populations or in settings that were not included in the research that generated the evidence. Partnerships and stakeholder engagement can provide opportunities to tailor strategies to a given context and coordinate strategies to ensure alignment.

4. MONITOR IMPLEMENTATION AND CONTEXT AND REFINE STRATEGIES ACCORDINGLY

Implementation strategies can influence the health service and patient health outcomes that are associated with the use of CER and PCOR evidence. It is important to measure implementation processes and outcomes such as fidelity and feasibility in order to understand the relationship

between processes and outcomes and verify the effectiveness of the implementation strategies (Powell et al. 2011; Proctor and Brownson 2012). Formative evaluations monitor implementation processes as they take place and inform any adjustments, whereas impact evaluations measure the implementation's effects on outcomes of interest, which take time to accrue (Powell et al. 2011). Because relevant data may not be systematically available or may be limited in nature, evaluators should also capture information about the limitations of the measures and data sources used in evaluation (Glasgow and Steiner 2012). Evaluations should also monitor implementation strategies for their unintended consequences, for example, undesirable behaviors or increased costs without improved quality (Damberg et al. 2014). Evaluators should be careful to distinguish outcomes associated with the evidence itself and those associated with the implementation strategies that were used (Powell et al. 2011). Monitoring the role of context is also critical for understanding the interplay between context and implementation, informing adjustments to strategies, and understanding the relative influence of organizational and broader environmental factors on outcomes (Scheirer and Dearing 2011). Research tools such as the Consolidated Framework for Implementation Research (Damschroder et al. 2009) can help to capture aspects of context that influence outcomes.

5. REINFORCE LONG-TERM CHANGES AND SUSTAINABILITY

Implementation and sustainability are both iterative, dynamic processes in which individuals and organizations continually reevaluate their use of evidence, adapt those parts of the evidence that they can adapt, and modify their

REINFORCE LONG-TERM CHANGES AND SUSTAINABILITY

- How will we capitalize on the improvements that are made to existing evidence and implementation processes?
 - How can we adjust our implementation processes and strategies in response to any changes in the available resources and capacities that affect sustainability (identified in the Assess phase in Figure 1)?
 - How have incentives to use evidence and users' capacity evolved, and to what extent do implementation strategies need to shift in response (for example, from education and engagement to policy change)?
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implementation processes and strategies as the context and the findings of evaluations evolve (Chambers et al. 2013; Scheirer and Dearing 2011). Chambers et al. (2013) present a Dynamic Sustainability Framework that is based on the idea that sustainability is cyclical in nature and that individuals and organizations actually use iterations and adaptations of the evidence to optimize it for their local needs. It will be critical to capitalize on those improvements in implementation processes. Further, the constantly evolving nature of the implementation context necessitates agility, reassessment of the capacity for sustainability, and refinement of the strategies that are used. Stakeholder input and partnerships can help to provide information on how the needs of individual adopters and organizations have evolved throughout an implementation (Johnson et al. 2004). Meanwhile, reinforcing long-term changes—through approaches such as accreditation, regulation, and payment models—will signal the continued importance of using the evidence and codifying its use over time.

CONCLUSIONS

To improve the implementation and advance the sustainability of CER and PCOR evidence in practice, it is important to:

- Understand implementation and sustainability as dynamic, cyclical processes
- Engage stakeholders to elicit their input, to develop strategies that address their needs and decision making environments, and to measure effectiveness in terms of outcomes that are most important to them
- Address the multilevel contexts of implementation and identify strategies that can concurrently target the different levels of context and align incentives and capacity to encourage use of evidence
- Conduct robust monitoring and evaluation to learn more about how adapting CER and PCOR evidence can improve its effectiveness and to understand how implementation strategies influence the health outcomes that are achieved
- Refine strategies over time to respond to the evolving broader environment and the shifts in the resources and incentives that support the use of evidence

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