Introduction

On January 8, 2015, the Patient-Centered Outcomes Research Institute (PCORI) Improving Healthcare Systems (IHS) program held a multi-stakeholder workgroup to explore gaps in knowledge and refine comparative effectiveness research (CER) questions on the impact of accountable care organizations (ACOs) on patient-centered outcomes. This workgroup consisted of patients, researchers, clinicians, and representatives of payer, purchaser, patient and family advocacy, and funder organizations.

The day began with stage-setting presentations by:

- Robert Kaplan, PhD, Chief Science Officer, AHRQ
- Bryan Luce, PhD, MS, MBA, Chief Science Officer, PCORI
- Mark McClellan, MD, PhD, Senior Fellow and Director of the Health Care Innovation and Value Initiative, Brookings Institution
- Tricia McGinnis, MPP, MPH, Vice President, Center for Health Care Strategies
- Steve Clauser, PhD, MPA, Program Director, Improving Healthcare Systems, PCORI
- Penny Mohr, MA, Senior Program Officer, Improving Healthcare Systems, PCORI

Participants were organized by their interests and expertise into four breakout groups—ACO Structures and Risk Sharing Arrangements, Patient and Provider Activation, Delivery Services, and Medicaid—which met to discuss, revise, and formulate potential CER questions. After the breakout sessions, participants reconvened to summarize and discuss the results and rank a narrowed set of questions based on patient-centeredness, impact on the health of individuals and populations, assessment of current options, likelihood of implementation in practice, durability of information, and overall importance.

Why Is This an Important Area of Research?

The accountable care organization (ACO) is a rapidly growing organizational model with the explicit goals of improving patient outcomes and restraining costs. ACOs vary considerably, not only in terms of financial risk and payment arrangements (with entities such as Medicare, Medicaid, and commercial payers), but also among a variety of characteristics such as ownership, size, degree of integration across participating providers, patient and community engagement in governance, and internal payment arrangements, among other variations. There are many open questions as to how these characteristics influence healthcare delivery such as care coordination, use of various health information technology (HIT), and clinical decision supports as well as how these models affect clinicians’ practice, patient
engagement in care, and health outcomes. Workgroup participants expressed that the wide variation among ACOs is a potential challenge for research in this field.

Participants identified several evidence gaps as much is unknown about ACOs, and noted that the effects of ACOs on patient-centered outcomes, patient experience, and patient engagement have only recently begun to be studied. Participants noted there are also limited to no data on how various organizational structures and types of interventions affect patient outcomes, and little understanding as to which strategies and models drive quality improvement and cost savings. They indicated that research is also needed to help identify which payer and provider payment arrangements and internal provider incentive structures are most effective in improving patient-centered outcomes. Other research funders have focused on the impact of ACOs on cost and quality, giving PCORI a unique role to play in funding key patient-centered comparative questions.

**Breakout Session & Report Back**

Before the meeting, PCORI staff conducted informational interviews with stakeholders to identify evidence gaps, areas of research in which PCORI could have an impact, and potential CER questions. Invited participants proposed CER questions on this topic as well. PCORI staff grouped the questions into four categories: ACO Structures and Risk Sharing Arrangements, Patient and Provider Activation, Delivery Services, and Medicaid. PCORI staff reviewed and refined stakeholders’ input and drafted three to five representative questions in each category.

The ACO Structures and Risk Sharing Arrangements breakout group discussed the need to understand the various strategies to improve patient-centered outcomes. Some of these strategies include team care and work distribution, financial risk-sharing, care bundles, behavioral health integration, internal incentives for both patients and providers, and HIT. The Patient and Provider Activation breakout group focused their discussion on the need to understand the key drivers to activate patients, as patient activation is crucial for the success of an ACO. The Delivery Services breakout group discussed the need to better understand how organizations can build infrastructure to capture the “right” kind of data and build capacity to analyze data and relay relevant information to providers in a timely fashion to improve healthcare quality, care coordination, and outcomes. The Medicaid breakout group focused their discussion on behavioral health, social determinants of health, and vulnerable populations. They also questioned whether they should strictly focus on the Medicaid populations as this is not a Medicaid-specific issue and interventions are important for all populations.

During the report-back session, questions posed by participants largely fell into several categories:

- Specific interventions (electronic health records/HIT, team care, expanded access) within ACOs
- Organizational structures (physician-led vs. hospital-led, internal payment models)
• Payment and risk-sharing arrangements that allow degrees of freedom beyond fee-for-service to allocate resources more effectively within a delivery system
• Organizational policies and incentives (governance, internal payment structures, patient attribution) that influence care delivery and outcomes

The overall broad question during the breakout sessions and report-back was, “What are the specific services or components of a successful ACO?” Services and components that participants identified as important to study included: patient activation and engagement, the availability and use of data information, integration of behavioral health, and linkage of community and social services.

Participants largely felt that the most relevant comparators at the delivery system level would be across different types of ACOs, or, in the case of Medicaid managed care arrangements, there was agreement that comparing ACOs to fee-for-service would not be as useful to advance the field. The group agreed that some comparisons could take place within an ACO, depending on the size of the organization and its ability to affect internal changes. Populations of interest identified included high-risk and medically complex individuals, and the vulnerable and underserved populations, though this largely depends on the question (for instance, a Medicaid ACO is likely to serve a more specifically vulnerable population than a commercial ACO). Participants also suggested PCORNet, the National Patient-Centered Clinical Research Network, a large, highly representative, national data network for conducting CER, as an avenue to conduct studies in this field.

**Research Questions Rank Results**

After review and discussion of all breakout group questions, participants ranked a narrowed set of questions—11 in total—on a 5-point Likert scale based on patient-centeredness, impact on the health of individuals and populations, assessment of current options, likelihood of implementation in practice, durability of information, and overall importance. Each participant was also asked to recommend one of the 11 CER questions for PCORI to pursue as a top priority. Participants identified the following questions as top priorities:

• Do (Medicaid) ACOs that incorporate behavioral health (including substance abuse) into the program perform better than those that do not on outcomes such as: achieving patient-defined goals, care coordination, increased primary care utilization, population health indicators, and social service utilization?

• Do ACOs that incorporate community and social services into their care coordination perform better on patient-centered outcomes than ACOs that do not?

• Are different approaches (models, intensity, relationship, incentives, proximity) of patient and/or provider engagement better at improving patient-centered outcomes for different subpopulations than others?
• What are the characteristics of ACOs* that encourage packaged population health innovations^, and what are the impacts of these on patient engagement and patient-centered outcomes?

*Characteristics of ACOs include ownership, external risk and payment arrangements, patient and community engagement in governance, internal payment arrangements, and local and national market considerations.

^Packaged, interdependent population health innovations: access (responsiveness to patient needs), team care (strategic distribution of work), risk-stratified care management and care coordination, integrated/seamless behavioral health integration, internal incentives for patients and providers, HIT functionality and interoperability.

All four of the questions above received the highest number of votes for PCORI top-priority question (each receiving either six or seven votes) and received high overall importance scores. The question “Do (Medicaid) ACOs that incorporate behavioral health (including substance abuse) into the program perform better than those that do not on outcomes such as: achieving patient-defined goals, care coordination, increased primary care utilization, population health indicators, and social service utilization?” received the highest average overall importance score (4.43) and was the only question in which participants ranked this question as moderate importance or higher for the overall importance criteria (i.e., no participant ranked this question as low importance or very low importance in terms of overall importance). Participants ranked this question highly across all criteria, ranking highest in patient-centeredness and lowest in likelihood of implementation in practice.

The question “Do ACOs that incorporate community and social services into their care coordination perform better on patient-centered outcomes than ACOs that do not?” had the second highest average overall importance score (4.22) with the majority of participants ranking this question of high or very high importance in terms of overall importance. Participants also ranked this question highest in the patient-centeredness criterion and lowest in the likelihood of implementation in practice criterion.

Participants ranked the question “Are different approaches (models, intensity, relationship, incentives, proximity) of patient and/or provider engagement better at improving patient-centered outcomes for different subpopulations than others?” consistently high across all criteria with patient-centeredness being the highest. The question “What are the characteristics of ACOs that encourage packaged population health innovations, and what are the impacts of these on patient engagement and patient-centered outcomes?” was ranked highest in the assessment of current options criteria and lowest in likelihood of implementation in practice. See the appendices below for scoring information of overall importance criterion and rank of top-priority question for all CER questions. Specific data for rating of other criteria is available upon request.

Opportunity to Work with the Agency for Healthcare Research and Quality (AHRQ)
AHRQ has long been involved in funding research on health systems and healthcare financing change and examining its impact on patient access, quality, and affordability. As part of its mission, AHRQ is charged to work with partners, such as PCORI, to make sure that the evidence is understood and used. Several new initiatives will strengthen the agency’s capacity to evaluate the rapid changes occurring in healthcare organization and financing. For example, in Spring 2015, AHRQ will begin supporting three centers of excellence to understand the characteristics of high-performing health systems and to develop and implement methods to measure health system performance, with an emphasis on performance in disseminating patient-centered outcomes research. With a complementary interest in the performance of ACOs, there is an opportunity for PCORI to work closely with AHRQ on a new initiative on this topic.

**Next Steps**

To conclude the day, it was noted that the IHS program at PCORI intends to continue to refine the questions put forth by the workgroup. In addition, program staff will continue conversations with AHRQ about potentially developing a funding announcement on the impact of ACOs on patient-centered outcomes.
### Appendix

#### A. Reports the mean score and standard deviation (STD) for the criteria of “overall importance” on a scale of 1-5, with 1 scoring low and 5 scoring high, and the number of votes for top-priority question that PCORI should pursue.

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean Overall Score With Standard Deviation (STD) (On a 1-5 scale with 5 being high)</th>
<th>Vote (number of votes for top-priority question)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do (Medicaid) ACOs that incorporate behavioral health (including substance abuse) into the program perform better than those that do not on outcomes such as: achieving patient-defined goals, care coordination, increased primary care utilization, population health indicators, and social service utilization?</td>
<td>4.43 (STD: 0.63)</td>
<td>6</td>
</tr>
<tr>
<td>Do ACOs that incorporate community and social services into their care coordination perform better on patient-centered outcomes than ACOs that do not?</td>
<td>4.22 (STD: 0.85)</td>
<td>7</td>
</tr>
<tr>
<td>Are different approaches (models, intensity, relationship, incentives, proximity) of patient and/or provider engagement better at improving patient-centered outcomes for different subpopulations than others?</td>
<td>3.91 (STD: 0.81)</td>
<td>6</td>
</tr>
<tr>
<td>Do ACOs which have access to and use information that is timely and actionable to inform care coordination strategies have better results on improving patient-centered outcomes?</td>
<td>3.87 (STD: 0.80)</td>
<td>3</td>
</tr>
<tr>
<td>What are the characteristics of ACOs* that encourage packaged population health innovations^, and what are the impacts of these on patient engagement and patient-centered outcomes?</td>
<td>3.81 (STD: 0.88)</td>
<td>7</td>
</tr>
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*Characteristics of ACOs include ownership, external risk and payment arrangements, patient and community engagement in governance, internal payment arrangements, and local and national market considerations.

^Packaged, interdependent population health innovations: access (responsiveness to patient needs), team care (strategic distribution of work), risk-stratified care management and care coordination, integrated/seamless behavioral health integration, internal incentives for patients and providers, health IT (HIT) functionality and interoperability.
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<tr>
<th>Question</th>
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<th>Vote (number of votes for top-priority question)</th>
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<tr>
<td>Do certain Medicaid populations (complex medical needs, severe and persistent mental illness (SPMI), kids) benefit more than others from ACO models, in terms of outcomes such as: achieving patient-defined goals, health outcomes, and total cost of care (TCOC)?</td>
<td>3.81 STD: 0.75</td>
<td></td>
</tr>
<tr>
<td>Do patients in an ACO that report having a team taking care of them have better patient-centered outcomes? Do these results correlate with structural measures of team-based care?</td>
<td>3.44 STD: 0.96</td>
<td></td>
</tr>
<tr>
<td>What types of data information feedback is optimal for encouraging team behavior and patient engagement?</td>
<td>3.42 STD: 0.90</td>
<td>1</td>
</tr>
<tr>
<td>Are different approaches of incorporation of patient input into program strategy and program design and operations better at improving patient and/or providers’ activation and patient-centered outcomes than others?</td>
<td>3.33 STD: 1.00</td>
<td>1</td>
</tr>
<tr>
<td>Do Medicaid-only ACOs versus Medicaid plus other payer ACOs perform better on population health outcomes, total cost of care (TCOC), patient satisfaction and other patient-centered outcomes?</td>
<td>3.09 STD: 0.59</td>
<td></td>
</tr>
<tr>
<td>Do ACOs that have a collaborative payer/provider arrangement do better on patient-centered outcomes versus solely provider-driven arrangements on patient-centered outcomes?</td>
<td>3.04 STD: 0.72</td>
<td></td>
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</table>
B. Displays the frequency of each ranked score for the criteria “overall importance” per question

Impact of Accountable Care Organizations (ACOs) on Patient-Centered Outcomes Workgroup Summary

Do (Medicaid) ACOs that incorporate behavioral health (incl. substance abuse) into the program perform better than those that do not on outcomes such as: achieving patient-defined goals, care coordination, increased primary care utilization, population health indicators, social service utilization?

Do ACOS that incorporate community and social services into their care coordination perform better on patient-centered outcomes than ACOs that do not?

Are different approaches (models, intensity, relationship, incentives, proximity) of patient and/or provider engagement better at improving patient-centered outcomes for different subpopulations than others?

Do ACOs which have access to and use information that is timely and actionable to inform care coordination strategies have better results on improving patient-centered outcomes?

Do certain Medicaid populations (complex medical needs, SPMI, kids, etc.) benefit more than others from ACO models, in terms of outcomes such as: achieving patient-defined goals, health outcomes, and TCOC?

What are the characteristics of ACOs that encourage packaged population health innovations, and what are the impacts of these on patient engagement and patient-centered outcomes?

Do patients in an ACO that report having a team taking care of them have better patient-centered outcomes. Do these results correlate with structural measures of team-based care?

What types of data information feedback is optimal for encouraging team behavior and patient engagement?

Are different approaches of incorporation of patient input into program strategy and program design and operations better at improving patient and/or providers’ activation and patient-centered outcomes than others?

Do Medicaid-only ACOs vs. Medicaid + other payer ACOs perform better on population health outcomes, TCOC, patient satisfaction, and other patient-centered outcomes?

Do ACOs that have a collaborative payer/provider arrangement do better on patient-centered outcomes vs. solely provider-driven arrangements on patient-centered outcomes?

Impact of ACOs on Patient-Centered Outcomes: Frequency of Overall Score