Author's response to reviews

Title: Research in Action: Using Positive Deviance to Improve Quality of Health Care

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Author's response to reviews: see over
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Gregory A. Aarons
Associate Editor
Implementation Science

Dear Dr. Aarons,

Thank you for your review of our manuscript, MS: 2035701234218268 entitled “Research in Action: Using Positive Deviance to Improve Quality of Health Care.” We have reviewed the comments from you and the two reviewers and revised the paper substantially based on these helpful comments.

Enclosed is an itemized list of the comments and our response to each comment. Because the comments required extensive revision and reorganization of the manuscript, we do not repeat the long sections of the revised text in the itemized responses; rather we refer to the page numbers of the revision.

To summarize revisions made in response to the editor’s and reviewers’ comments, we have:

• Provided more detail on PD and when it is most helpful (Pp. 6-7)
• Added methodological considerations in using PD (Pp. 7-9)
• Compared and contrasted PD to other approaches of identifying and disseminating innovations, focusing on theoretical underpinnings of PD as compared with other approaches (Pp. 9-14)
• Added theoretical depth and references to section on dissemination (Pp. 13-15)
• Expanded and deepened the case study (Pp. 15-21)

Some results in the case study are under review and will likely be properly referenced in future edits; for now, these are referenced as unpublished data (P. 21).

We believe the paper is much stronger with these revisions and thank you for your continued interest in this work. If you have any questions, please contact me at Elizabeth.brady@yale.edu or 203.785.2937.

Sincerely,

Elizabeth H. Bradley, PhD
Professor of Public Health
Director, Health Management Program
Yale School of Public Health
Editor comments

Comment #1
The place of positive deviance (PD) in the organizational and practice change literature should be clearly identified. Pros and cons of PD and other methods should be discussed so that the reader can determine why PD or other approaches are more or less important for changing practice in medical care settings.

Response

We agree with the reviewer. We have revised the paper in two ways to address this comment. First, throughout the paper, we identify the positive deviance (PD) approach as one of several approaches to organizational and practice change. Second, we have added a section (Pp. 9-14) explicitly comparing and contrasting PD to other approaches. Because the literature is broad and we were mindful of space constraints, we summarize other approaches to identifying and disseminating innovations in practice in two broad areas: 1) biomedical or epidemiologic outcomes research (Pp. 9-10) and 2) quality improvement or action research (Pp. 10-12). We recognize that these are broad categories and that examination of the various nuances of the methods, while important, is beyond the scope of this manuscript. We selected these categories as distinct anchors of the range of approaches used to identify and disseminate innovations. As we discuss in the paper (Pp. 12-14), we believe PD is a method of integrating effective aspects of each.

Comment #2

The elements and mechanisms of PD should be identified and discussed in more detail. Mechanisms by which PD might foster organizational and practice change should be identified, so they can be examined and tested in more detailed studies of how PD operates, including what aspects of elements are critical or expendable.

Response

The reviewer suggests an important expansion to the paper. In the revision, we describe in more depth the theoretical elements and mechanisms of the PD approach in the abstract (Pp. 7-9 under the subheading, “Methodological considerations in the positive deviance approach”) and on P. 9 as we compare PD to other approaches. We also revisit these issues in their application to the case illustration of using PD to improve heart attack care in hospitals (Pp. 15-21). In describing the mechanisms, we do not distinguish those that are expendable as we believe each is critical to the success of this method. On Pp. 19-20, we identify how features of the case illustrate key principles in using the PD approach for effective discovery and dissemination.
**Reviewer #1**

**Comment #1**
Provide a deeper discussion of the theoretical and conceptual underpinnings of PD. Link PD to other theories and models of uptake of innovations or implementation of guidelines extracting the similarities as well as points of divergence that the PD concept offers in comparison to other ideas.

**Response**

We agree with the reviewer, and we have added substantially to the theoretical underpinnings of the paper. Specifically, we describe other approaches (Pp. 9-12) and discuss in detail the advantages and disadvantages of PD relative to these approaches (Pp. 12-14). In order to provide more explicit guidance to readers interested in determining whether PD may be of value in their own research, we also have added a section (Pp. 6-7) that outlines under what circumstances the PD might be particularly useful.

**Comment #2**
I am not sure where the approach differs from the existing ideas if you are taking a deviant rather than a success approach; these ideas need more exploration.

**Response**

We understand the reviewer’s concern. To address this concern, we have added a section comparing PD to other approaches (Pp. 12-14).

**Comment #3**
A description of how the methodology worked and reporting some details of successes rather than broad brush statements is warranted. Learning about how the methodology itself was received and taken up is important to explore.

**Response**

We have greatly expanded the discussion of the case application, where we describe step-by-step how PD was used to improve heart attack care (Pp. 15-21). In this section, we include information about the receptivity of providers and organizations to both the methodology, as well as to the empirical findings generated by a PD approach.

**Comment #4**
I was looking at what makes an organization innovative and open to adoption and implementation of innovations from their own discoveries or others’ discoveries. There are ample theories here (works by Andy Ven de Ven and colleagues, Michael West and colleagues, Theresa Amabile and colleagues, and Mumford and colleagues). This is a methodological paper, but it is bereft of ideas from the broader literature on explaining reasons for change or resistance. Using this literature, develop the PD approach better in this paper.
Response

The reviewer cites key theoretical literature in the identification of what makes organizations innovative, open to adoption of new ideas and practices and able to implement these new ideas and practices. This literature focuses on readiness and reasons for change, as well as resistance to change. These are important literatures for diffusion (i.e., the spread of innovations across industries or communities) and these have been well-summarized [1, 2] as pertinent to health care.

In this paper, we are describing the use of PD as an approach to discover and then disseminate new practices, with the goal of promoting widespread uptake. In the revision, we have briefly discussed the characteristics of users (i.e., the adopting organizations) that might facilitate quicker adoption and implementation on Pp. 14-15. However, our focus remains on the discovery and dissemination phases, rather than on what makes an organization innovative and more likely to adopt new practices. We are happy to consider expansion of the discussion of characteristics of adopting organizations, although these aspects of change processes are well-documented already in health care [1-9]. Appropriate discussion of these concepts would require fairly expansive additions, and we are mindful of space constraints. We have added a number of citations for the reader who wishes to pursue more depth in this area.

Comment #5
Most other methodologies for change engage participants in understanding the process through mixed methods approach, so the authors need to make clear how the PD approach substantially adds something new. However, if a deeper understanding in the theoretical understanding of what was happening in PD were put forward (antecedents, processes, outcomes and interactions), then testing those hypotheses in action would be an interesting and important contribution to the theoretical underpinnings of the methodology.

Response

We agree with the reviewer that action research and quality improvement methodologies to promote organizational change can engage participants in understanding the process through mixed methods approaches. PD is distinct from these methods because it uses extant organizations to identify and characterize the innovative practices to be recommended. Hence, whereas action research and quality improvement seek to develop best practices through a participative and collaborative process of improvement, PD presumes that the best practices are already known and implemented in some organizations. PD then uses mixed methods to characterize what is already in place and then to test hypotheses developed from these cases in broader samples of organizations. We address the differences between PD and action research or quality improvement approaches on Pp. 12-14.

Comment #6
I am not suggesting reporting a study, but more examples of the successes in using PD would be helpful to distinguish and elaborate the methods compared with others.
Response

We considered whether to add more examples of the success of using PD or to discuss a specific case in greater depth. As our goal was to describe in detail the underpinnings of the approach, we believed greater depth in a single case was more useful for readers. This also addresses the suggestion of the other reviewer to describe mechanisms and methods in greater depth. Therefore, we have expanded the application discussion substantially on Pp. 15-21 of the revised manuscript.

Comment #7
Can the success of PD be expected to work elsewhere or does each organization require a PD process to succeed? Some terrific examples were included here but the reader would have liked more detail.

Response
The reviewer raises an important issue. The PD process is more useful in certain circumstances, as we have described in detail on revised Pp. 6-7. Consistent with our response to comment #4, our goal was not to describe or identify organization-level features that make the organization more apt to change, as that is a separate concern and well-researched in health care. Instead, we were focusing on how researchers can use the experience of already successful organizations to identify and then disseminate innovations in ways that prompt timely and wide uptake. Therefore, we discuss the relationship of potential adopting organizations and PD researchers as a mechanism of enhancing the dissemination. We did not discuss other features of users that prompt greater adoption and implementation of innovations as we believe it is a related but somewhat distinct topic and may distract readers from the main goals of the paper.

Comment #8
I was left asking to what degree the PD approach was the predictor or main contributor of successful outcomes? Arguably, the methodology remains constant across contexts, but the question is what is similar or different across those contexts that contributed to variance in successful outcomes across deviant and non-deviant groups?

Response
We are not sure we understand the comment in full. We view PD as a methodological approach to discovering what has contributed to success of various organizations. It is therefore a method, not an independent mechanism of change. We are happy to respond further if we have misunderstood the question.

Comment #9
The paper should differentiate among the PD approach compare with existing participative and community consultation methodologies that have existed for many years (work by Fred Emery and Merrelyn Emery and importantly writings in the Human Relations Journal and from Socio-Technical Schools of thought in Europe.)
Response

The reviewer makes an important point, and we agree that the paper is stronger if we differentiate between PD and other participative and community consultation methods. At the same time, we were challenged to summarize all the various participative methods in the space provided and without distracting from the main aspects of the paper. Therefore, we have chosen to discuss approaches most commonly used in organizational improvement: quality improvement and action research. Necessarily, these terms are used broadly in the paper; if greater specificity is needed, we can provide more depth. Since this literature is extremely large and diverse in nature, we were mindful of being redundant with existing texts in summarizing these approaches. We have included explicit comparisons and contrasts of these approaches with the PD approach (Pp. 9-14), and throughout the paper, we have integrated and referenced additional existing theoretical literature. We believe this enhancement provides an appropriate theoretical context for readers to assess the relative strengths of PD.

Comment #10
Please consider more discussion of how PD contributes to successful change.

Response

We have included a new section on Pp. 13-14, which describes the role of PD in facilitating successful change through effective dissemination and subsequent uptake of innovations by the larger community. In addition, we have added to the case example of heart attacks, demonstrating the changes prompted by a PD approach using empirical data (Pp. 15-21).

Comment #11
The way in which the methodology supports approaches to Complex Adaptive Systems, which many advocate for health care, is warranted.

Response

We have added this to P. 12 in the discussion of strengths of the PD approach.

Comment #12
Understanding how the methodology interacts with context, i.e., what stages of the process does the methodology enable: design, adoption, or diffusion of the innovation?

Response

The methodology interacts with context by allowing organizational context (e.g., organizational culture, leadership approach, motivation approaches) to become part of the best practices characterized at top performing organizations. Thereby, the methodology interacts with context at the stage of characterizing extant innovations. In addition,
because innovations are characterized with context included in the description, we believe that the PD approach enhances the ability for other organizations to understand and potentially adopt the innovation more readily.

If we have misunderstood the reviewer’s comment, please let us know so we can try to clarify our response. There is substantial variation in the literature regarding the definition of several terms in the reviewer’s comment. In the paper, we use the term adoption to mean the end users’ proactive efforts to assimilate the innovation. We use the term implementation to refer to the users’ actions to integrate and operationalize the innovation in practice within the organization. We use the term diffusion to refer to the uptake or spread (i.e., adoption and implementation by multiple users in the industry or community) of the innovation. Consistent with the framework developed by Greenhalgh [1], we use dissemination to refer to the active distribution of information and promoting of wide and timely diffusion of innovations.
Reviewer #2

Comment #1
Include a more substantial examination of PD as one methodology in the context of others and/or a more detailed discussion of their experiences with the method. Embed PD within a broader discussion of quality improvement mechanisms so it is clear how the PD approach differs from and is better than other common approaches for generating knowledge and improving practices that go by the names of Best Practice Initiatives, Benchmarking, Continuous Quality Improvement, Quality Performance Matrix as well as the Veterans’ Affairs Quality Enhancement Research Initiative (QUERI). The authors do not need an extensive literature review on each of these practices, but the case for utilizing PD will be made stronger if the readers are more systematically informed about the specific differences and benefits relative to these other approaches.

Response
We agree this broader methodological context and comparative information is useful for the reader in assessing the unique merits of a PD approach. Although we did not have adequate space to describe each of these practices in detail, we have added a section on alternative approaches to PD, which discusses quality improvement and action research in some depth (Pp. 9-12) and compares these with the PD approach (Pp. 12-14).

Comment #2
Using a case study approach, each step of the PD process poses numerous challenges and raises a variety of questions that the authors can explore more fully. How to choose a relevant community of organizations to sample from? How can local PDs be conducted to maximize national implications? Who starts PD investigations (service practitioners, organizational administrators, external researchers, policy makers, and/or existing collaborations)? What does the process look like within existing quality improvement initiatives? Likewise, the authors could provide more information about the other steps, such as how they were able to get organizations to adopt and implement a new practice.

Response
We agree with the reviewer. We have added a substantial section on “methodological considerations in the PD approach,” which addresses many of the sampling, data collection, and analysis issues the reviewer raises (Pp. 7-9). As recommended by the reviewer, we also have added greater depth to a step-by-step case of how PD was applied to improving heart attack care in the US (Pp. 15-21).

Comment #3
A more nuanced discussion of the challenges of PD (e.g., time, financial costs, collaboration management) would be helpful. Discuss the potential barriers to getting this model more widely adopted throughout health services quality improvement research.

Response
We thank the reviewer for this request. We have added to the section that describes the limitations of the PD approach (P. 13) and anticipates difficulties in having this approach used in health services research on quality more broadly. Although the challenges are not in the areas the reviewer identifies, we do address the general points of its limitations based on our experience and analysis.

Comment #4
Provide an explicit definition for the “door-to-balloon times” phrase that is utilized multiple times in the paper.

Response
Thank you for this suggestion to clarify this important term for our paper. Door-to-balloon time refers to the interval between hospital presentation and balloon angioplasty, or percutaneous coronary intervention (PCI), as stated on P. 15 of the revision.

Comment #5
Are all results of PD initiatives successful or are there a range of outcomes? If there is a range, why might some PD initiatives be more successful at generating change than others (e.g., problems conducting or analyzing qualitative or quantitative research or problems getting organizations/persons to change behaviors even after being presented with a new “best practice?”)

Response
The reviewer asks an important question; however, the use of PD as a method has not been adequately evaluated to be able to address the question thoroughly in this manuscript. However, we have added a section to articulate under what circumstances we would expect the PD approach to be more effective (Pp. 6-7), as well as the limitations of the approach (P. 13).

Comment #6
After the introductory section similar to current 4-5 pages and the added PD contextual material, the others might follow the same 5-step organization of the paper but include case study material in each step, rather than outlining all case study material later, as is now on Pp. 9-10.

Response
We appreciate the reviewer’s suggestion, and although we have retained the case study together in one section (Pp. 15-21), we have revised it to follow-up a step-by-step approach as recommended, and we refer to the former abstract discussion of PD to demonstrate its use in the applied setting.
References


