What Is the Experience of National Quality Campaigns? Views from the Field

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Objective. To identify key characteristics of a national quality campaign that participants viewed as effective, to understand mechanisms by which the campaign influenced hospital practices, and to elucidate contextual factors that modified the perceived influence of the campaign on hospital improvements.

Data Sources. In-depth interviews, hospital surveys, and Health Quality Alliance data.

Study Design. We conducted a qualitative study using in-depth interviews with clinical and administrative staff ($N=99$) at hospitals reporting strong influence ($n=6$) as well as hospitals reporting limited influence ($n=6$) of the Door-to-Balloon (D2B) Alliance, a national quality campaign to improve heart attack care. We analyzed these qualitative data as well as changes in hospital use of recommended strategies reported through a hospital survey and changes in treatment times using Health Quality Alliance data.

Data Collection Methods. In-depth, open-ended interviews; hospital survey.

Principal Findings. Key characteristics of the national quality campaign viewed as enhancing its effectiveness were as follows: credibility of the recommendations, perceived simplicity of the recommendations, alignment with hospitals' strategic goals, practical implementation tools, and breadth of the network of peer hospitals in the D2B Alliance. Perceived mechanisms of the campaign's influence included raising awareness and influencing goals, fostering strategy adoption, and influencing aspects of organizational culture. Modifying contextual factors included perceptions about current performance and internal championship for the recommended changes.

Conclusions. The impact of national quality campaigns may depend on both campaign design features and on the internal environment of participating hospitals.

Key Words. Quality improvement, campaigns, hospitals, acute myocardial infarction

Amid persistent evidence that many patients do not receive guideline-based care, national quality campaigns have developed to motivate widespread adoption of evidence-based practices to improve quality of care. Recent

examples include the 100,000 Lives and 5 Million Lives Campaigns sponsored by the Institute for Healthcare Improvement (Gosfield and Reinertsen 2005; Berwick et al. 2006; McCannon, Hackbarth, and Griffin 2007; American Heart Association 2009), and the Door-to-Balloon (D2B) Alliance for Quality led by the American College of Cardiology (Krumholz et al. 2008). Although there is some debate regarding the magnitude of impact (Wachter and Pronovost 2006), evidence (Berwick et al. 2006; McCannon et al. 2006; Bradley et al. 2009a) suggests that these campaigns can have measurable impact in increased adherence to guidelines and potentially marked reductions in preventable deaths.

Despite the widespread participation by hospitals in such national quality campaigns, we know little about users' perspectives about what makes such campaigns more effective or less effective. Previous research has reported views of network sponsors and researchers concerning characteristics of effective learning networks (Ovretveit 2002; Ovretveit et al. 2002; Wilson, Berwick, and Cleary 2003; Ayers et al. 2005; McCannon and Perla 2009), but these reports have not examined participant views. Nevertheless, participant views are important for understanding the characteristics of campaigns that enhance their effectiveness, for identifying why campaigns might be effective, and for describing the conditions under which campaigns may be more effective or less effective. This deeper understanding of campaigns may shed light into the process of effective dissemination of evidence-based practices to promote quality of care.

Accordingly, we sought to understand the influence of a national quality campaign, the D2B Alliance, from the participants' perspective. The D2B

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Alliance was a national quality campaign, sponsored by the American College of Cardiology and 38 other professional organizations and agencies, to disseminate evidence-based practices in reducing delays to between-hospital presentation and percutaneous coronary intervention (PCI), or balloon angioplasty, for patients with ST-segment elevation myocardial infarction (STEMI). The D2B Alliance was an open and free campaign that enrolled more than 1,000 U.S. hospitals in its first year (Krumholz et al. 2008). Hospitals enrolled by having a letter signed by the senior administrator committing to the goal of the D2B Alliance, which was for 75 percent of patients with STEMI treated with PCI to receive therapy within 90 minutes of hospital arrival, the D2B time target set by national guidelines. The D2B Alliance promoted the implementation of evidence-based strategies (Bradley et al. 2006; Bradley et al. 2009a) for reducing D2B time by disseminating a toolkit and a change package as well as providing open access to webinars, an online community, and a mentor network.

We addressed the following questions pertinent to national quality campaigns with our research. What characteristics of the campaign are viewed by participants as most effective? What are the mechanisms by which the campaign influences outcomes? And what are the contextual factors that modify the effectiveness of the campaign? Such information can be used by researchers, policy makers, and practitioners to anticipate the circumstances under which campaigns might be effective dissemination strategies and to include design features based on evidence about what participants view as most effective.

CONCEPTUAL FRAMEWORK

Our study was guided by the realist evaluation framework, which is an approach to program evaluation that asks what characteristics of an initiative work for whom and under what circumstances (Pawson and Tilley 1997). This framework premises that the following attributes are important for understanding the effectiveness of an initiative, such as a national quality campaign: (1) characteristics of the initiative, (2) mechanisms by which the initiative influences the outcome, (3) contextual, or modifying, factors, and (4) outcomes. Applying this framework to our inquiry, the initiative being evaluated was the D2B Alliance; outcomes included the adoption of strategies (an intermediate outcome) and hospitals' median D2B times (the final outcome). We used a qualitative study to understand the core characteristics of the program

that were experienced as most influential, the mechanisms of their influence, and the contextual factors that amplified or attenuated the influence of the program on participating hospitals. Realistic evaluators argue that the local context plays a critical role in the effectiveness of interventions and hence are important to understand before estimating the potential impact of programs.

Previous literature provided some guidance about potential characteristics and contextual factors that might be important to the influence of the D2B Alliance. For instance, in his seminal work on diffusion of innovations, Rogers (1995) identified five characteristics that speed the pace of diffusion: relative advantage, simplicity, trailability, compatibility, and observability. Rogers also asserted that aspects of communication channels, such as their use of existing social networks, influence diffusion. Last, factors in the social system, such as the degree to which there are internal opinion leaders who adopt the innovation enhance diffusion. Health services researchers (Greenhalgh et al. 2004; Yuan et al. 2010) have further proposed that environmental factors are influential. Such factors include the methods of dissemination (e.g., use of change agents) and the sociopolitical and economic incentives to spread the evidence-based practices. Guided by this literature, we sought to deepen our understanding of factors that may influence hospitals' experiences of national quality campaigns such as the D2B Alliance.

METHODS

Study Design and Sample

We conducted a qualitative study using site visits and in-depth interviews at hospitals that enrolled with the D2B Alliance between November 2006 and June 2007; the qualitative study design matched our goal because it is well-suited to illuminating the diverse experiences of organizational change and staff interactions (Sofaer 1999; Patton 2002).

Using a previously defined sample (Bradley et al. 2009a; Bradley et al. 2009b) of 797 hospitals that completed a baseline survey at the time of D2B Alliance enrollment, we focused on the 190 hospitals that had implemented only one or none of four evidence-based strategies recommended D2B Alliances on which we had data at the time of sample selection (i.e., emergency medicine activation of the catheterization laboratory, single-call activation, expectations that the catheterization team reports to the catheterization laboratory within 20–30 minutes of being paged, and prompt data feedback of D2B times). Two added recommended strategies (i.e., use of prehospital

electrocardiograms and presence of a dedicated team for reducing D2B time) were not used for sample selection because we did not have data on hospitals' use of these strategies until the subsequent survey. We also excluded hospitals ($n = 32$) that had already exceeded the D2B Alliance performance goal at the time of enrollment because we anticipated that the campaign would have less influence on them as they had already met and exceeded the campaign goal. Using this sampling frame, we then randomly selected hospitals to contact, augmenting the process with purposeful sampling (Glaser and Strauss 1967; Patton 2002) to ensure the hospitals represented a diverse set with regard to teaching status, geographical location, and size.

For each hospital selected, we conducted telephone interviews with the D2B Alliance hospital contact person (typically the quality management director or similar position) to identify hospitals as high or low influence hospitals. Hospitals were classified as high (versus low) influence if they used at least two of the tools and activities offered by the D2B Alliance and if they attribute some change in their hospital directly to the D2B Alliance. Consistent with theoretical sampling (Glaser and Strauss 1967), we also selected hospitals that varied in their baseline D2B time performance because early interviews suggested that existing performance may be an important contextual factor.

We conducted additional site visits with in-person interviews at hospitals until we reached theoretical saturation (Sofaer 1999; Patton 2002), that is, until no new concepts were elicited with successive site visits. Individuals interviewed were selected using snowball sampling to reflect staff from a range of disciplines, departments, and organizational levels (i.e., clinicians, senior management, middle management, and front-line staff) in STEMI care. We achieved theoretical saturation after 12 hospital site visits, which comprised 6 hospitals where staff viewed the campaign to have had little influence and 6 where staff perceived the campaign to have substantial influence.

Data Collection

Researchers in teams of two to three interviewers visited hospitals and conducted in-depth interviews (using the interview guide in Figure 1) generally with individual staff but also with staff teams, as preferred by the participants. Interviews were audio-taped with informed consent or hand-written when participants preferred not to be audio-taped. All transcripts were prepared by a professional transcriber, and a sample of transcripts was checked against the tapes to ensure accuracy. All research procedures were approved by the relevant Human Investigation Committee.

Figure 1: Discussion Guide for In-Depth Interviews

1. Tell us about the hospital's decision to join the D2B Alliance. How did that happen and why do you think the hospital joined?
2. What kind of impact has membership in the D2B Alliance had on your hospital, if any? (Probes about each reflection provided by the participant in order to elicit the full context and views on how the D2B Alliance influenced the hospital).
3. What efforts are there here to reduce door-to-balloon time? Can you tell us more about those and how they came about? (Probes for successes and failures and context regarding these events).
4. Tell us what it is like to work in this hospital in general. How would you characterize the organizational culture, the way people interact, what it feels like to be in this organization?
5. What would you say worked well about the D2B Alliance for your hospital? What worked less well or could have been more effective for the D2B Alliance to have done?
6. We are trying to understand the impact of the D2B Alliance on your hospital; is there anything else we should have asked you to understand this issue better?

Data Analysis

We used the constant comparative method of qualitative data analysis (Glaser and Strauss 1967; Miles and Huberman 1994; Patton 2002; Bradley, Curry, and Devers 2007) to code and synthesize recurrent themes in the transcripts. All transcripts were line-by-line reviewed first independently and then together for overall understanding and detailed coding of chunks of data, comprising common concepts. Each transcript was coded by three to five researchers, comprised consistently of three researchers (EHB, IMN, CTY) and augmented with any added researchers who attended the site visit or were involved in the interview. The code structure was developed inductively, based on concepts as they emerged from reviewing the transcripts; transcripts were re-reviewed with successive code structure changes until no new concepts were apparent and the code list was considered final. We then re-analyzed all transcripts, linking key concepts and extracting the recurrent themes across sites and interviews. Disagreements in coding and interpretation were resolved through negotiated group consensus. We used Atlas/Ti to organize the data, facilitate its analysis, and retrieve key quotations for reporting. To enhance the validity and reproducibility of our findings, we applied a standardized interview guide, we retained an audit trail of code development, and we involved researchers from varying disciplines in the analysis, as recommended by

experts in qualitative analysis (Miles and Huberman 1994; Mays and Pope 1995; Patton 2002; Curry, Nembhard, and Bradley 2009).

RESULTS

Characteristics of the Hospital Sample

The 12 hospitals studied (Table 1) varied in number of staffed beds, teaching status, geographical location, and baseline performance. Similarly, the staff interviewed (Table 2) reflected a diversity of backgrounds and roles.

Key Characteristics of the D2B Alliance Viewed to Be Effective by Participants

Analysis of participants' perspectives about the campaign highlighted five key elements that were viewed by staff in all hospitals as increasing the campaign's effectiveness: (1) the credibility of the recommendations; (2) the simplicity of the recommendations; (3) the alignment of the recommendations with hospitals' strategic goals; (4) the availability of practical implementation tools; and (5) the access to a network of hospitals also striving to improve in the same clinical area (Figure 2).

Credibility. Staff described the credibility of the D2B Alliance as paramount to their adoption of recommended strategies. The credibility derived from the

Table 1: Characteristics of Hospital Sample

<i>Characteristics</i>	<i>N (%)</i>
Teaching status	
Teaching	6 (50)
Non-teaching	6 (50)
Number of beds	
< 400 beds	2 (17)
400–700 beds	7 (58)
> 700 beds	3 (25)
Regional location	
Northeast/Mid Atlantic	4 (33)
MidWest/NorthWest	2 (17)
South/Southwest	3 (25)
West	2 (17)
Hospital performance (cases meeting 90-minute guideline)	
Baseline mean (standard deviation)	49% (19 percentage points)
Follow-up mean (standard deviation)	74% (12 percentage points)

Table 2: Staff Interviewed (*N* = 99)

<i>Primary Position at Hospital</i>	<i>n</i>
Emergency medicine physicians	10
Cardiologists	15
Nurse/technicians in catheterization laboratory	15
Cardiology department staff	12
Emergency department staff	11
Quality improvement staff	9
Emergency medical services paramedics and team	8
Middle- and senior-level administrators	19
Total	99

research-based evidence underlying the recommendations and the professional affiliation with the American College of Cardiology and several other professional organizations and well-known leaders in cardiology. For instance, a cardiologist said:

[The recommendations] were really tested strategies, so that you could look at them and say, “Nobody is going to argue with the goal. The goal is already based on evidence.” . . . and the D2B Alliance gives the whole process credibility . . . It doesn’t feel like I’m alone just trying to propose something. A whole group of people are doing this. So let’s everyone get on board. The credibility helps. (Cardiologist, Hospital #12)

Simplicity. Participants also indicated that an effective aspect of the D2B Alliance was the perceived simplicity of the recommendations. Several staff commented on the effectiveness of the D2B Alliance in its distilling massive

Figure 2: Model of National Quality Campaign Effectiveness

amounts of scientific evidence to a short list of specific recommendations. For instance, a hospital administrator said:

I don't want to belittle the efforts of the D2B Alliance but when [name] sent the materials to me, we had been looking for what I will call a recipe for what is the—I don't necessarily want to say “best practice”—but what is out there that other people utilize successfully. When [name] sent the D2B Alliance information to me, I am like, “okay, here is a roadmap that people are using that seems to work.” (Senior Vice President for Patient Services, Hospital #10)

The administrator explained that she had been searching for a simple, standardized approach for reducing D2B time; she was nonetheless hesitant about oversimplifying and using “cookbook medicine.” However, in this case, the simplicity and packaging of recommendations were valued given their roots in a strong evidence base.

Alignment. A third aspect of the D2B Alliance that was reflected in participants' views of its effectiveness was its alignment with the strategic goals of the hospital in the context of public reporting of D2B times by Centers for Medicare & Medicaid Services and pay-for-performance initiatives. Participants noted that the D2B Alliance was embraced by both clinical and managerial leaders, as it was viewed to support both patient care and financial goals of the hospital. The D2B Alliance was seen as helping hospitals meet their strategic goals of improving performance with respect to publicly reported measures (i.e., D2B time), of gaining chest pain center accreditation, and of enhancing the hospital's strength in the cardiology market.

The win in it comes from the fact that we're really able to get our hands around a core measure that has an impact on our financials and our quality outcomes . . . I mean it has spillover in all of those realms. (Director of Cardiovascular Services, Hospital #9)

Practical Implementation Tools. Staff described the implementation toolkit and “how to” materials in the change package as useful. Additionally, they highlighted a set of practical tools including protocols, order sets, flow charts, letter templates, and data capture forms that were disseminated by the D2B Alliance and shared widely among participating hospitals.

The D2B Alliance gave you tools and I used them all . . . I looked at who they said should be on board for the meetings; we looked at the strategies, what we have in place as opposed to what they are recommending. There was no stone left unturned. (Cardiovascular Quality Program Manager, Hospital #8)

Network. Participants underscored the importance of having a network of hospitals across the country working together on reducing D2B time. Staff

described using the network to learn what worked in other organizations. For instance, one nurse in quality improvement said the following:

I would meet with the cardiologists in a monthly meeting and there would be a question about the latest trends and so that's where the listservs really came in handy because . . . instead of Googling or Medlining for hours and not finding something in 9,000 different articles, I could go to a group of people who were in the exact same boat we were in at different stages along the process. That was probably the biggest gain for us was the access to the listserv and to everybody uploading their powerpoints for what their hospitals were doing. (Data Analyst, Hospital #10)

Mechanisms by Which the D2B Alliance Had Influence

Three mechanisms emerged from the qualitative data analysis to explain why the D2B Alliance was influential: (1) building awareness and fostering goal setting, (2) promoting strategy adoption (both recommended and other strategies), and (3) influencing aspects of organizational culture (Figure 2). Different hospitals focused on different mechanisms with some indicating all three were important and others indicating only one or two of the mechanisms were operating in their setting.

Awareness and Goal Setting. Staff in all hospitals reported that the D2B Alliance had elevated the attention on D2B times. In some hospitals, the campaign catalyzed efforts and in other hospitals, the campaign reinforced efforts that were already initiated, but in all hospitals, the campaign was viewed as raising awareness and fostering commitment to the goal of meeting D2B time guidelines. In some cases, this increased organizational commitment, rather than implementing the recommended strategies, was viewed to be the central mechanism for improving D2B times.

I think the biggest impact [of the D2B Alliance] is just raising awareness, so that it is really at the front of our minds every time there is an acute MI. (Cardiologist, Hospital #4)

Strategy Adoption. Staff identified promoting the adoption of recommended strategies as another important mechanism in reducing D2B times. As an example, participants described the role of the D2B Alliance on the catheterization laboratory activation process, which the D2B Alliance recommended should be done by emergency medicine physicians rather than by cardiologists.

We finally convinced the physicians to allow ED activation of the cath lab, which had always been a huge issue before. A lot of times, that fell more with our cardiologists not being willing to let the ED physicians make that decision. But

finally it got to the point where all the cardiologists had heard of the D2B Alliance. They knew, whether they wanted to admit to it or not, that things really needed to change. (Data Analyst, Hospital #1)

In addition to adoption of recommended strategies, staff in some hospitals indicated that a mechanism by which the D2B Alliance influenced the hospital was catalyzing the development of innovative strategies that were not specifically recommended but worked. Examples of such strategies included cross-training of staff, quick-access medical boxes for STEMI care, and a variety of work flow changes that reduced delays. In several cases, these strategies were applied to other clinical processes and cases, with favorable results.

The fact that we look at the processes differently than we used to has made a huge difference in things we actually do in the cath lab. Through all of the things we are learning from the D2B Alliance, we are actually improving work flow and processes within the cath lab on all cases. (Catheterization Laboratory Nurse, Hospital #9)

Organizational Culture. Staff in some hospitals described the importance of the D2B Alliance in influencing the organizational culture, particularly in the areas of stronger teamwork and better relationships among departments and disciplines. Staff also highlighted improved coordination across departments and disciplines and greater focus on achieving a common goal as mechanisms by which D2B time was improved.

Our relationship in general is just better now. You can work in a hospital for years and rarely talk with other physicians not in your area, and that is how it was here. We hardly knew each other. But to make this work, you have to sit face to face in the same room and really come to it with some respect for each other. And you learn how to work with each other, what others need, and over time—well, you build some trust. (Cardiologist, Hospital #2)

Sitting at the table developing relationships between the cath lab, the ER . . . it's pulled them up to a common goal with this patient population because certainly the ER sees a lot more than our MIs. I think it has brought that relationship piece together to help us build a better process for our patients. (Patient Care Manager, Hospital #12)

Contextual Factors Modifying the Perceived Influence of the D2B Alliance

Contextual factors moderated the perceived effectiveness of the D2B Alliance on outcomes. Although high and low influence hospitals agreed on the key characteristics for campaign effectiveness and faced largely similar external environments in terms of the public reporting of D2B times as a quality measure, they differed in their perception of the campaign's influence on their hospitals due to differences in their internal environments. Contextual factors

included the following: (1) degree of perceived need to change practices, (2) degree of openness to external sources of information, and (3) degree of internal championship for the recommended changes (Figure 2).

Degree to Which Hospital Staff Perceived the Need to Change. Staff in several hospitals where the campaign was believed to have high influence said that the campaign occurred at a time when they were searching for ways to reduce D2B time and provided needed information to facilitate improvement. In contrast, staff in other hospitals remarked that they were already on the path to making the changes recommended by the D2B Alliance when the campaign was launched and therefore did not attribute their changes to the D2B Alliance.

When you look at the initiatives, the six things, we are doing everything here and we were doing it before. It was funny because all the things that we came up with, they came up with the same things. (Manager Cardiac Services, Hospital #5)

Despite these perceptions, however, former reports completed at baseline indicated that hospitals had implemented one or none of the recommended strategies. When asked about these conflicting data, some staff revised comments to say that they could not remember exactly when the changes took place or described that the strategy was only partially implemented earlier.

Degree of Openness to External Sources for Information or Experience. Staff in hospitals where the D2B Alliance was perceived to have had high influence underscored the importance of learning from external sources. In several cases, the information and endorsement from external sources legitimized recommended practices and helped convince internal stakeholders to change.

What the D2B Alliance did was give us the tools . . . just the fact that they were a neutral party with a wealth of data was, to me, ammunition. I think it has done wonders for us. We still have a ways to go, but I can always go back and say, these are the [recommended] strategies. (Cardiovascular Quality Program Manager, Hospital #8)

In contrast, staff in hospitals where the campaign was viewed as ineffective suggested that their hospitals were not open to external sources of information. Some hospitals indicated that they were unique and therefore would not benefit much from other hospitals' experiences.

The newsletter? I skim through it. It seems sort of interesting. But, you know, I just feel like—I hate to sound like I'm a know-it-all but I don't think I or we need it.

I think we know where our problems are and we've been trying to improve them. (Cardiologist, Hospital #4)

I think [the motivation for change] needs to come from within the [physician] group. It truly needs to come from *within* the group. If there are things out there that I have not thought of to make them think it is *their* idea, I would be happy to know! (Clinical Director of Cardiovascular Services, Hospital #2)

Degree of Internal Championship for Changes. Staff in hospitals that viewed the campaign to have been effective described strong internal championship that absorbed the campaign information and used it to propel their efforts.

With the D2B Alliance, I was able to capitalize on that and take the tools and say okay, now I have a framework to launch the team with. (Director of Cardiovascular Services, Hospital #9)

In other hospitals, staff indicated that the campaign could not be helpful because the hospital lacked the internal resources to make needed changes.

We have so many internal issues where it's like, oh my gosh, a lot of this would be really wonderful, but the whole process is really tied up here internally. Even if you had different physician [experts] to come in and talk to our physicians, they just wouldn't receive it. (Data Analyst, Hospital #1)

I know what we need to do. The online community can't help me. We need to move people off the dime. I could say that there are buckets of information about what we could be doing, but [it does not help]. (Clinical Director of Cardiovascular Services, Hospital #2)

Outcomes of the Campaign

Nearly 1 year after campaign enrollment, all hospitals had improved their D2B time performance, and most had adopted one or more of the recommendations recommended by the campaign (Table 3). The magnitude of improvement in D2B time differed across hospitals. Among hospitals with below median baseline performance, hospitals that perceived the D2B Alliance to have had high influence (Hospital #7–#10) improved more than hospitals that perceived the D2B Alliance to have had low influence (Hospital #1–#4) (32.5 versus 26.0 percentage point increase, respectively, in the percent of STEMI cases with door-to-balloon times within 90 minutes). The pattern was different for hospitals that had above median performance at baseline. Surprisingly, among this group, those reporting high influence of the

Table 3: Hospital Outcomes Stratified by High Versus Low Influence and by Baseline Performance

ID	State	Number of Staffed Beds	Baseline Performance	Number of Recommended Strategies* Adopted Since Campaign	Change in Percent of Cases Meeting Guidelines (at Follow-up Compared with Baseline)	Improvement in Percent of Cases Meeting Guidelines
Hospitals reporting campaign had low influence						
1	CA	1,004	Below median	1	29	Average improvement: 26.0 percentage points
2	PA	460	Below median	1	31	
3	TN	562	Below median	1	30	
4	NY	2,095	Below median	0	14	
5	CA	475	Above median	1	23	Average improvement: 20.5 percentage points
6	NY	315	Above median	0	18	
Hospitals reporting campaign had high influence						
7	LA	719	Below median	3	46	Average improvement: 32.5 percentage points
8	IL	494	Below median	3	33	
9	FL	492	Below median	3	25	
10	GA	217	Below median	1	26	
11	CT	573	Above median	0	5	Average improvement: 11.5 percentage points
12	ND	522	Above median	5	18	

*Strategies included activation of catheterization laboratory by emergency medicine, use of a single call for catheterization team activation, expectations that catheterization team will arrive in laboratory within 30 minutes of page, prompt data feedback, use of prehospital electrocardiograms to activate the catheterization team while the patient is still en route, and having a team dedicated to improving door-to-balloon time.

campaign (Hospital #11–#12) improved less than those reporting low influence of the campaign (Hospital #5–#6) (11.5 versus 20.5 percentage point increase, respectively, in the percent of STEMI cases with D2B times within 90 minutes). This may have been because hospital IDs 11–12 were at or almost at the target performance at baseline and because they experienced improvement in other outcomes not assessed here, such as improved interdepartmental coordination.

It is notable that the high versus low influence hospitals adopted more of the D2B Alliance recommended strategies, and this may have explained their view that the campaign had had high influence on the hospital even if their outcomes (i.e., door-to-balloon times) did not improve markedly. Based on our interviews, hospitals that had substantial improvement in outcomes but reported the campaign as having low influence generally attributed their improvement to their own efforts rather than the ideas or actions of the campaign.

DISCUSSION

Our findings highlight several campaign characteristics that hospital staff participating in the D2B Alliance perceived to be critical to the campaign's effectiveness. These were the credibility and the simplicity of the campaign recommendations, alignment of the campaign goal with the strategic goals of the hospital, and the access to practical implementation tools and to a network of hospitals with the same improvement goal. These characteristics are consistent with many of the features of innovations known to speed diffusion (Rogers 1995; Greenhalgh et al. 2004; Nembhard 2009; Yuan et al. 2010) but have not been examined previously in the context of quality campaigns. For instance, others (Rogers 1995; Greenhalgh et al. 2004) have suggested simplicity is a critical characteristic of successful diffusions, and some of the other characteristics that we found to be important such as alignment with hospitals' strategic goals, practical implementation tools, and credibility are consistent with Rogers' notion of relative advantage. Additionally, the importance of access to a network for learning is consonant with findings that opportunities for learning from other organizations are particularly valued by quality collaborative members (Nembhard et al. 2009). Our work also identified mechanisms by which the campaign influenced hospitals, which included not only adoption of new practices but also fostering goal setting and shifts in features of organizational culture, which have been less examined in previous literature on diffusion.

As anticipated by the realist evaluation framework, we found evidence of contextual factors, which modified the reported effect of the campaign

and provided insight into the circumstances that may limit the effectiveness of campaigns and potential strategies for addressing such limitations. First, the campaign had only modest influence in hospitals that did not perceive the need to change already; devoting adequate resources to articulating the need for the recommended changes is likely to enhance campaign effectiveness. Second, the campaign had limited influence in hospitals that were not open to external sources of information (including learning from the campaign network). Campaign designers therefore may increase campaign effectiveness by structuring networks whose members view each other as having valuable experience to offer. Future research might inform the optimal size and approach to maximizing information and instrumental network exchanges within the context of quality campaigns. Finally, the effectiveness of the campaign was attenuated in hospitals that lacked the internal championship to implement recommended changes. This finding highlights a central paradox of what has been termed the bandwagon effect (Westphal, Gulati, and Shortell 1997) and which underlies the design of national quality campaigns. Ease of enrollment and open-access campaign materials promote rapid, widespread communication, which should foster faster take-up of evidence-based. At the same time, open, free campaigns may risk attracting enrollees with less depth of commitment, hence slowing take-up rates. The tradeoff is important to consider when designing quality campaigns.

As with any study, our findings should be interpreted in light of our methods and scope of inquiry. Our qualitative study was not designed to evaluate the effect of the D2B Alliance on patient outcomes, such as mortality, which requires a larger, quantitative methodology. As is common in qualitative studies, the number of hospitals in our sample was limited, although we did seek to ensure diversity in teaching status, size, and performance, and we continued site visits until we reached theoretical saturation on the area of inquiry. However, we were unable to conduct subgroup analyses of certain types of hospitals, given the modest sample size. Last, we identified existing internal championship as a feature of context that modified the perceived ability of the campaign to influence hospital practices; however, we did not examine in depth the various dimensions and behaviors of leadership that foster such internal resources. Although it is beyond the scope of this study, future efforts might examine aspects of leadership that may be fundamental to building organizational capacity to learn and absorb best practices not only from internal quality efforts but also from external sources such as quality campaigns.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

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