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Appreciative Inquiry for Quality Improvement in Primary Care Practices

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Abstract

Purpose—To test the effect of an Appreciative Inquiry (AI) quality improvement strategy, on clinical quality management and practice development outcomes. AI enables discovery of shared motivations, envisioning a transformed future, and learning around implementation of a change process.

Methods—Thirty diverse primary care practices were randomly assigned to receive an AI-based intervention focused on a practice-chosen topic and on improving preventive service delivery (PSD) rates. Medical record review assessed change in PSD rates. Ethnographic fieldnotes and observational checklist analysis used editing and immersion/crystallization methods to identify factors affecting intervention implementation and practice development outcomes.

Results—PSD rates did not change. Field note analysis suggested that the intervention elicited core motivations, facilitated development of a shared vision, defined change objectives and

fostered respectful interactions. Practices most likely to implement the intervention or develop new practice capacities exhibited one or more of the following: support from key leader(s), a sense of urgency for change, a mission focused on serving patients, health care system and practice flexibility, and a history of constructive practice change.

Conclusions—An AI approach and enabling practice conditions can lead to intervention implementation and practice development by connecting individual and practice strengths and motivations to the change objective.

Introduction

In busy practices, quality management often feels more like a burden than an opportunity for growth.¹ While clinicians and staff view staying up to date on new clinical, technical and process improvements in medicine and health care as desirable,²⁻⁶ often these are seen as low priority or uninspiring goals.^{2, 4, 7-10} The pace required to meet the growing demands and productivity-oriented business model of health care make it increasingly difficult to garner interest and effort toward better quality.¹¹⁻¹⁵ To improve or maintain the quality of health care in the face of these challenges, change efforts need to feel relevant and energizing at the practice level.

Improvements in the area of preventive service delivery (PSD) may be particularly difficult to realize. Although the cornerstone of quality health care for decades¹⁶⁻²⁰ especially in primary care,^{13, 21-27} previous work highlights the challenging effects of competing clinical demands on the quantity and quality of preventive services being delivered.^{11, 15} An increasing emphasis on throughput and financial pressures serve as prevalent barriers to change in improving preventive service delivery.²⁸⁻³³ New intervention approaches are needed to inspire creativity and innovation in improving preventive care in primary care settings.

Appreciative Inquiry (AI)³⁴ is a change approach that holds promise for energizing quality management in healthcare. This technique, often used in business settings,³⁵⁻³⁷ fosters organizational growth by tapping into the core motivations, strengths, and values that inspire and energize individuals and that provide an impetus for change. AI focuses on a pre-determined area of organizational need. In addition, the AI process involves group work (e.g. guiding and challenging individuals and the group to be self-reflective and to proactively transfer existing inspiration and drive toward new goals) that can develop organizational competences (i.e. communication and collaboration skills). The AI process fosters positive relationships and builds on the basic goodness in a person, a situation, or an organization to enhance collaboration and change around common goals as shown in Figure 1. AI first identifies a collective goal among participants (an Appreciative Topic/change objective) and then follows four stages to act upon this theme:³⁶⁻⁴⁰

1. discovery - determining what is positive and meaningful,
2. dream - envisioning a transformed future,
3. design - planning and implementing change, and,
4. destiny - evaluating and sustaining progress.

In this paper, we present the clinical quality management outcomes from a trial to improve rates of delivery of preventive services and describe how an AI intervention can foster organizational growth at the practice level in primary care settings.

Study methods

The EPOCHS Clinical Trial Design

A group randomized clinical trial to improve preventive services delivery (PSD) rates was implemented between October 2005 and August 2007 in 30 primary care practices in northeast Ohio. The Enhancing Prevention through Communities and Healthcare Systems (EPOCHS) trial used an AI intervention approach³⁴ to guide the development, design and implementation of two cycles of quality improvement. Practices were randomized to intervention and control groups, with intervention practices receiving an initial cycle focused on a practice chosen change objective followed by a second cycle specifically targeting improvements in PSD. The study design included a mixed methods practice development and process evaluation to assess practice-level variations in the implementation and outcomes of a complex intervention and change process.⁴¹⁻⁴³

Practice and patient selection

To maximize the diversity of the sample, practices were recruited from three organizational settings: a highly integrated health care system, a health care system emphasizing independent practice, and safety net practices caring for underserved populations. Within each system, practices characteristics were assessed and randomization was conducted between pairs of practices matched on size and medical specialty mix. Every six months medical records from consecutive patients seen on a pre-determined index date were reviewed to assess PSD outcomes.

Intervention

The quality improvement intervention consisted of two facilitated cycles of the appreciative inquiry process^{34, 37, 39-40} (Figure 1). Because our prior work identified the challenge of engaging over-stretched primary care practices in a pre-determined, prevention-focused quality improvement initiative,⁴¹ the first cycle AI change objective allowed flexibility by addressing immediate practice concerns that may not have been PSD-related. For the second AI cycle, a prevention-specific change objective relevant to practice interests and needs was chosen.

Several initial steps were conducted in the first cycle to identify a quality improvement change objective and to elicit engagement and support for the project. Research team members met with health system leaders to discuss the project in the context of current system-wide improvement goals and ongoing initiatives. Interviews with practice leaders were conducted at each site to elicit practice-level quality concerns. Additionally, the project facilitator spent several days in each practice talking with and observing staff in different roles to gain a more complete understanding of quality interests and on-the-ground problems.

A general structure suggested to practices for the AI intervention process was comprised of four, two-hour practice-wide meetings corresponding to the four AI stages. In the Discovery stage, practice members share stories of peak experiences that bring out individual and collective motivation and meaning. The Dream stage involves practice members envisioning a transformed practice. The Design stage includes prioritizing, testing and step-by-step planning of the practice improvement. Sometimes this was accomplished at whole practice meetings; other times it involved small, voluntary action teams with broad cross-role representation of practice staff, for more detailed planning and implementation work around the change objective. Practices were offered facilitator assistance in designing and implementing the change objective based upon practice willingness and interest and the timeframe of the study. Facilitator assistance might include sharing observations of the practice, encouraging ongoing practice self-assessment and reflection, offering suggestions for moving the intervention process along (including instructions on the traditional quality improvement plan-do-study-act cycle), redirecting discussions that strayed off topic or focused on problems rather than opportunities, facilitating group communication, or keeping in touch via email or phone calls to track practice progress.⁴⁴ The fourth AI stage, Destiny, entails reflection on and learning from the action cycles. As described previously in this journal,³⁴ the structure was tailored to each practice by shortening or combining meetings if time limitations and schedules prevented members of a practice from accommodating the suggested format.⁴¹ The second AI cycle was designed to be completed with fewer meetings based upon the assumption that the AI process was familiar to practice members and the general change objective (a focus on improving preventive service delivery) had been established in advance.

Data collection and measures for evaluation of preventive service delivery rates

We hypothesized that average preventive service delivery at 18-months post intervention would be higher among the intervention group than the control group, accounting for baseline preventive service delivery and differences in patient and practice characteristics.

The quality outcome measure for the clinical trial was patients' up-to-date PSD score. To calculate this score, a trained research nurse visited intervention and control practices at baseline and at three 6-month intervals thereafter using a previously validated method to collect detailed medical record data on age and gender-based preventive services recommended by the US Preventive Services Task Force (USPSTF)²¹ and received by each patient within the recommended interval.⁴⁵ An up-to-date score was calculated by dividing the total number of services received by the total number of USPSTF-recommended services for each individual. A global score and separate subscores for components related to counseling, screening, and immunization services were calculated, using methods developed and validated in previous studies.⁴⁵⁻⁴⁷ For services that did not have a specified time frame, (e.g. seatbelt use, sun exposure) a default of two years was used. A minimum of forty medical records were reviewed at each participating practice to enable a reliable estimate of practice performance.

To assess potential confounders not available in the medical record we mailed a questionnaire to the first 120 patients seen on the index date(s). A reminder mailing

followed in two weeks to maximize the response rate. In accordance with IRB requirements, patient questionnaires were anonymous and not linked to medical record reviews.

Data collection and measures for process and practice development evaluation

Baseline practice assessment data identified initial practice characteristics and regular patterns of organizational behavior and functioning. A 117-item practice environment checklist⁴⁸ describing practice values, structures and processes was completed by the research facilitator. Ethnographic field notes were generated following each practice-wide intervention meeting by the facilitator and at least one other member of the research team (a nurse, physician, social worker, or a public health professional) to document intervention activities and effects (e.g., discussion topics, plans made, changes implemented, level and of practice member involvement, and practice members' reactions and responses). Additional field notes documented facilitator-practice interactions that may have occurred outside of the practice wide meetings. Finally, practice members at intervention practices were asked to fill out a brief survey at the conclusion of their active participation in the study (month 18) comprised of 24 items that assessed practice values and processes and five open ended questions evaluating the intervention process and suggestions for improvement.

Quantitative outcome analysis

In comparing changes in PSD across intervention and control practices, we used Hierarchical Linear Models (HLM).⁴⁹ This statistical approach takes into account the nesting of patients within practices and the resulting similarity in study outcomes that may arise among a group of patients treated within a specific practice. The output of this model occurs at two "levels": the level one model, for example, tests the association of patient characteristics (e.g., gender, ethnicity, age, and the number of visits and no shows in the previous year) with the outcome, while the level two model tests associations with practice-level characteristics (e.g., intervention assignment, health system affiliation, and baseline preventive service delivery scores).

Intraclass correlation coefficients (ICC) were assessed to confirm that multilevel modeling was appropriate. The ICC values for each preventive service delivery outcome variable ranged from 0.32 for the global score to 0.15 for screening suggesting variability across practices and the need for hierarchical modeling.

Sample size calculations

Initial power analysis based on results from an earlier study using the up-to-date PSD score.⁴⁶⁻⁴⁷ was performed. This study, using an effect size of 0.7 standard deviations and an ICC of 0.24, would have suggested a sample size of 600 patients from 30 practices. Subsequent analysis determined a higher ICC of 0.32. Using this value, we determined that our sample of 30 practices and 40 patients/practice had 88% power to detect an effect size of 0.70 in comparing intervention and control practices assuming a 0.05 level of significance.

Qualitative process analysis

The analysis of qualitative data was an iterative process alternating between individual or small group work and analyses done by a larger multi-disciplinary team consisting of a

facilitator/organizational behaviorist (CC), a research nurse/public health professional (MR) and the family physician-investigator leading the study (KS). Initially, two analysts (CC and MR) reviewed the ethnographic field notes and reflected back upon the intervention process at the 15 initial-intervention practices to gain a global perspective on what happened and why. The analysis team then discussed global findings and the variety of intervention effects across practice settings. MR and CC did a second more in-depth analysis of field notes from the practice assessment, the *Destiny* (evaluation) stage of the AI process, and post-intervention practice member surveys. We analyzed these data to characterize changes and to identify initial conditions that appeared to enable greater engagement with the AI intervention process and with positive practice change. The data were edited and summarized to clarify practice contextual factors and practice and facilitator actions during the intervention process. A final stage of analysis involved the entire analysis and writing team using an immersion/crystallization analysis approach to understand and make sense of what happened at practices in response to the intervention.

Results

Following randomization, we observed that one of the 30 participating sites was comprised of two independently operated Pediatric and Family Medicine practices. Although we treated these practices as separate sites, both retained their original assignment to the intervention group. Because one study site in the intervention group declined further participation during the course of the clinical trial, our final sample of 30 practices was evenly divided between the intervention and control groups. Seven practices in the control group chose not to have an intervention following study cross-over. Table 1 shows the characteristics of participating practices. Table 2 shows characteristics of participating patients.

Quantitative Preventive Service Delivery Outcomes

Age, gender, number of visits in previous year, number of no shows, ethnicity, and race were statistically different between the intervention and delayed groups and related to global preventive service delivery or its components, and were treated as potential confounders. In the fixed effects model shown in Table 3, the intervention group global preventive service delivery score was similar to that of the delayed group ($p=.72$) with similar results observed for each sub-category of preventive service delivery (counseling [$p=.96$]; screening [$p=.99$]; and immunizations [$p=.64$]).

Analyses of Qualitative Data on the Process of Change

For the first AI cycle, practice-wide meetings ranged from four 1-hour meetings to two 2-hour meetings. Most practices created intervention action teams in addition to having whole practice meetings. The number of action team meetings held varied from 0-6, including informal interactions among team members during normal work hours. Facilitator-attended action team meetings ranged from 0-5. The second AI cycle was generally completed in 1-2 practice-wide meetings and was also augmented by facilitator visits (0-2) and/or phone or e-mail communication (0-2). One intervention practice did not participate in the cycle 2 AI.

Practice Changes from the Appreciative Inquiry Process—Table 4 lists the domains of practice changes from the AI intervention process. Each of these is described below.

Accomplishment of instrumental changes meaningful to the practice because of their connection with a larger shared purpose

The *Discovery* and *Dream* stages of AI identified group values and a sense of common purpose among practice members and helped target instrumental changes that could serve as stepping stones toward this larger shared purpose. In the *Discovery* stage of AI connections to group values surfaced when participants shared stories of momentous practice events that reinforced a sense of shared purpose. *Dreaming* of the ideal practice of the future challenged practice members to identify actionable practice improvements with a clear connection to group values.

For example, two practices chose to implement staff recognition and morale improvement activities because they determined there was a clear connection between happy workers and conscientious, productive patient care. Other practice changes chosen because of their connection to shared values and goals within the practice included: use of childhood obesity and healthy choices patient education materials, obesity and diabetes-screening tracking systems, a facilities maintenance plan, developing a new job description and hiring new staff, changing practice meetings and decision-making to include cross-role representation and input, patient registration and scheduling protocols, use of a “quit line” for smoking cessation, a medication refill protocol, patient education and information bulletin boards, a process to increase patient access to their electronic medical records, and development of a community resource catalog.

Finding common ground

The AI intervention process led to discussions among practice members about individual values and goals. In some practices these discussions revealed previously unknown or unacknowledged common ground among practice members’ motivations for change. At one, practice members were able to look beyond initial potential solutions to a problem and identify the broader goals motivating change. At another practice, some members insisted that a new phone system was needed while others thought more phone-response training was necessary. The common ground discovered - and the instrumental change desired- was for patients to have easier access to the practice by phone. At a third practice, the clinical staff and the clinic administration were at a rigid impasse of misunderstanding about clinic values and priorities. By sharing personal stories each side came to appreciate the difficulty of the other’s role and the importance of both perspectives in meeting the diverse needs of their patient population. At another site, relationships had devolved into antagonistic cliques. By discussing and sharing what was important to all practice members a shared frustration with and desire to improve the current state of practice relationships was exposed. The recognition of a common desire surprised practice members and laid the groundwork for collective action.

Development of trust and a safe environment for sharing

Trust was considered to exist when practice members felt safe enough to share their feelings and ideas about improving the practice. In one practice, participants did not trust the motivations of the authoritarian office manager or partisan physicians and felt they could not be forthright without risking repercussion. With assistance from the facilitator, members of this practice developed and agreed to follow guidelines relating to confidentiality and a suspension of consequences when people respectfully shared opinions. Gradually, modeling the facilitator's open, nonjudgmental approach and proposed guidelines, an environment evolved where practice members felt safe enough to share their feelings and concerns. This enabled the group to move forward and focus on the practice's need and focus for change.

A new understanding of themselves as individuals or as a group

A new understanding of personal or group character was defined by a novel portrayal of or fresh acknowledgement of individual or group strengths or weaknesses. The new knowledge enabled practice change by identifying necessary approaches and objectives for intervention. A new understanding was often revealed by comments of affirmation or surprise during personal and group reflection activities. One practice came to acknowledge a hindrance to practice change resulting from their egalitarian approach to practice management. Progress was made when the practice generated alternative methods of decision making when group consensus proved elusive in choosing or implementing a practice change. Another practice acknowledged that current communication patterns characterized by decrees often resulted in inaccurate perceptions of practice leader's values that stalemated change. A third practice came to the conclusion that they routinely were able to identify shared goals but consistently stalled when it came to follow through action. The practice shifted their time and energy to defining and implementing action steps. For one physician the new understanding was personal. She confessed that her struggle with decisiveness and adhering to time limits was likely hindering practice change. She and the practice accepted facilitator-imposed deadlines in order to move toward their change objective.

Initial Conditions that enabled the Appreciative Inquiry Process—Table 5 lists initial conditions that were seen in analysis to enable or impede engagement with the AI intervention process and with positive practice change.

Support from a key leader(s)

A key leader was seen as any highly influential person within the practice or the health care system. Vocal encouragement, resource allocation or engaged participation in the intervention process by that individual during any stage of the AI intervention process was regarded as support. Support often translated into enabling entrée to the practice, scheduling practice meetings or encouraging and modeling active participation and enthusiasm for practice improvement. In some instances a lack of support did not become obvious until time or resource commitments were requested to implement a change plan.

A sense of urgency for change

A sense of urgency for change was interpreted as a pervasive sense that practice change was important, necessary, and needed sooner rather than later. Pressing needs for change that surfaced during the AI intervention process included issues related to interpersonal communication, power sharing, practice efficiency, staff performance and inefficient phone systems.

A mission to serve patients was exemplified by a strong desire and commitment to assist and work for the wellbeing of patients. Mission driven practices (i.e., practices at which the mission was clearly understood and broadly shared by the majority of practice members) went well beyond offering polite customer service. Practice members at mission-driven practices often spoke of their commitment to patients and the motivation and reward that accompanied this commitment. This sense of mission was most apparent in “safety-net” practices serving underserved and high needs patients. A mission to serve patients was embedded also within a desire to serve the local community at some practices, particularly at practices with long-term connections to a community.

Health care system and practice flexibility

Flexibility was characterized by the amount and quality of practice adaptation perceived to be allowed from both the health care system and the practice level administration or leaders. A flexible health care system was more accommodating than directive in influencing practice change. A practice was considered flexible if variation and improvised adjustments to protocols and processes were routinely considered viable options for change. A perceived lack of flexibility by practice members often hampered the generation of actionable ideas for improvement or served as a rationale for inaction. In some instances this led practices to whittle change plans down to steps of minimal significance.

A history that allows practice members to perceive the possibility of change

A history characterized by past success at adopting or implementing practice change often inspired confidence and optimism when contemplating change in the present. An enabling history frequently included supportive leadership, responsiveness to urgent needs and a high commitment to serving patients.

Discussion

Our AI-based intervention did not promote change in preventive service delivery rates. However, a close examination of the process of intervention implementation suggests that it was successful in engaging practice members in developing a sense of shared purpose and identity that enabled some participants to discover, envision and implement meaningful change objectives and learn from the change process. Our results suggest that AI is most likely to be embraced by members in practices where there is a perceived urgent practice need or concern, clear system and practice leadership support for change, a perception of flexibility around options for change, and, where there is a history of previous success implementing change. We believe that these findings may be affected by at least two factors

- common aspects of practice life that impede efforts to improve quality and compromises made to our intervention process.

First, the current conditions of daily practice often impede practice change. Primary care practices face tremendous productivity pressures in today's health care environment.^{31, 50-51} In addition, practice resources are shallow. In the current stretched-thin environment, practices have limited capacity for change. They are under strong pressure just to get through and survive the day. Thus, even if motivation is generated by the initial AI stages, competing demands and limitations mitigate against being able to translate this motivation and vision into changes that may make more work in the short term, even if they have the potential to be beneficial in the long term.

Second, our AI approach was a compromise on two levels.³⁴ Logistically, the AI intervention was squeezed into busy practice days, rather than rolled out in off-site day-long or multi-day retreats, as it typically has been used in industry.^{36, 40} Embedding the introduction and implementation of the intervention within usual work days was necessary to achieve the initial buy-in of staff members at busy participating practices. Yet, the truncated schedule meant abbreviating important elements of the AI process; the crafting of a resonate change topic and the sharing of personal stories that are both the source of new organizational images and set a climate for collective dreaming by helping people open up about deeply held desires and yearnings.³⁷ Furthermore, schedule restrictions meant that the intervention did not necessarily have the time to generate buy-in and strong instrumental support of the practice and systems leaders (a key initial condition for practice engagement) or allow motivated, engaged practice participants to gain a sense that the envisioned changes could be supported in day-to-day practice. This adapted approach may have impeded the effectiveness of AI and discouraged practices from initiating truly transformative change by encouraging a quick and easy change objective. Additionally, in order to try to find a balance between changes that were fully practice-initiated and those that related specifically to preventive service delivery, we engaged practices in two AI cycles: the first on a totally practice-initiated topic, the second on preventive service delivery. A shared motivation among practice members is considered important for quality improvement success,⁵² however, many practices found the PSD topic less engaging than the change objective that they self-identified as being more important. The compromise of trying to rush through two topics in already over-extended practices may have been self-defeating.

We acknowledge the following potential limitations to the study. First, our familiarity and comfort with Appreciative Inquiry may not have been strong enough to make us proficient at adapting the approach to an untried setting and timeframe. Our training and previous exposure to the process were around two to three day intensive intervention retreats in business settings and our skill at helping to craft an affirmative topic that is 'strategic, attractive and positive instead of problem focused'³⁷ were un-tested. Second, in successful examples of AI, the management and leadership of organizations were intensely involved in setting the appreciative topic and throughout the design and implementation stages. Additionally, a goal of AI is to change the way people talk about and perceive their organization, to generate a new, or at least expanded self image that plays out in how people perform. Our timeframe, the practice's availability, and the initial study time spent

identifying practice change objectives made our approach ill-suited to molding practice culture or facilitating the transformational changes that AI has produced for others.

One way to act on these interpretations of the findings would be to apply AI only in highly selected settings in which time, high-level buy-in and follow-through resources are present. There are hopeful signs¹ that when primary care practices are given reduced workloads they are more able to make substantial practice improvements.⁵³⁻⁵⁴ System changes that provide primary care with the time and resources necessary to fulfill its essential role in a functional health care system⁵⁵⁻⁵⁶ will provide increased opportunities for application of study findings.

Another approach is to build on what has been learned here about when the AI process may be most helpful, and how it can be tailored to the unique characteristics of each setting.⁴⁴ An AI topic that reflects a shared practice vision and purpose is more engaging to practices than an externally decided change topic. In particular, the AI process can be helpful to practices needing to address issues where self-reflection and clarity of practice values are important. A topic reflecting shared values can energize people on a personal, meaningful level and allow practice members to coalesce around a common goal. Based upon the level of enthusiasm we observed in practices when a shared vision was identified it may be an important consideration when trying to choose and implement a practice improvement. Further study incorporating efforts to uncover and take advantage of existing practice motivations, in addition to finding ways to develop enabling practice conditions, may inform the development of creative multi-faceted interventions that can better mesh with external guideline goals to improve quality management in healthcare.

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Appreciative Inquiry For Practice Change

Step Purpose *Techniques*

Figure 1.

Each oval in the Figure names the step (bold), its purpose (underlined), and examples of techniques (italics) that can be used to facilitate the AI process. Between-meeting work is depicted next to the ovals.

Used with permission from Carter CA, Ruhe MC, Weyer SM, Litaker D, Fry RE, Stange KC. An appreciative inquiry approach to practice improvement and transformative change in health care settings. *Quality Management in Health Care*. 2007;16(3):194-204

Table 1

Characteristics of Participating Practices

	Intervention [Mean (SD) or %]	Delayed [Mean (SD) or %]
Practices	(n=15)	(n=15)
System		
Integrated system	5	6
Independent practice system	4	3
Safety-net practice	6	6
# clinicians at practice		
1-2	3	3
3-6	11	6
>6	1	6
Specialty mix at practice		
Mixed primary care	2	6
Family medicine	9	5
General internal medicine	3	2
Pediatrics	1	2

Table 2

CHARACTERISTICS OF PARTICIPATING PATIENTS

	Intervention (n = 640)	Delayed (n = 600)	P	Baseline PS Rate ^a	P
Patient age, mean (SD)	34.8 (23.0)	38.1 (22.8)	.010	−0.49 ^b	.001
Patient gender			.004		.751
Male	44%	36%		38% (0.18)	
Female	56%	64%		38% (0.17)	
No. of visits in previous year, mean (SD)	4.3 (3.1)	3.7 (2.56)	<.001	0.14 ^b	.001
No. of no shows, mean (SD)	0.8 (1.37)	0.6 (1.20)	.019	0.14 ^a	.001
Ethnicity			.002		.061
Hispanic	7%	3%		42% (0.17)	
Not Hispanic	93%	97%		38% (0.18)	
Race			.016		.135
White	57%	48%		38% (0.15)	
Black	41%	48%		40% (0.19)	
Other	2%	4%		43% (0.19)	
Baseline global preventive service delivery rate	38.1% (0.18)	37.6% (0.18)	.628		

^aBaseline preventive service delivery rate, mean or correlation.
^bCorrelation coefficient.

HIERARCHICAL LINEAR MODELS OF PREVENTIVE SERVICE DELIVERY RATES AFTER 18 MONTHS OF FOLLOW-UP^a

Table 3

Effects	Total Preventive Services			Screening Services			Counseling Services			Immunization Services		
	Coefficient (SE)	P		Coefficient (SE)	P		Coefficient (SE)	P		Coefficient (SE)	P	
Level 1												
Intercept	0.101 (0.02)	.000		0.531 (0.08)	.000		0.089 (0.03)	.002		0.028 (0.04)	.494	
Age	−0.002 (0.0001)	.000		−0.004 (0.0002)	.000		−0.003 (0.0002)	.000		−0.004 (0.0003)	.000	
Male	0.019 (0.004)	.000		−0.015 (0.01)	.046		0.006 (0.01)	.322		−0.010 (0.01)	.355	
Hispanic	−0.013 (0.01)	.282		−0.026 (0.02)	.172		−0.028 (0.02)	.080		−.003 (.03)	.899	
No. of visits in previous year	0.008 (0.001)	.000		−0.006 (0.001)	.000		0.009 (0.001)	.000		0.013 (0.004)	.000	
No. of no shows in the last year	0.002 (0.0001)	.294		0.006 (0.003)	.063		0.002 (0.003)	.393		0.007 (0.0003)	.095	
Level 2												
Intervention group	−0.004 (0.01)	.719		0.0002 (0.02)	.993		0.001 (0.01)	.955		0.090 (0.02)	.645	
System 1	−0.020 (0.01)	.162		−0.038 (0.03)	.251		−0.029 (0.02)	.089		−.00002 (0.03)	.999	
System 2	0.020 (0.01)	.086		0.032 (0.02)	.186		0.024 (0.01)	.084		0.047 (0.02)	.050	
Baseline preventive service delivery	0.578 (0.05)	.000		0.312 (0.10)	.006		0.569 (0.05)	.000		0.643 (0.05)	.000	

^a A negative coefficient indicates a lower percentage up to date on respective preventive service delivery rates.

Table 4
PRACTICE DEVELOPMENTS FROM THE AI INTERVENTION PROCESS

Instrumental changes meaningful because of their connection with a larger-shared purpose
Finding common ground
Development of trust and a safe environment for sharing
New understanding of self or the group

Table 5

INITIAL CONDITIONS ENABLING GREATER ENGAGEMENT WITH THE AI INTERVENTION PROCESS AND POSITIVE CHANGE

Support from a key leader(s)
Sense of urgency for change
Mission focused on serving patients
Health care system and practice flexibility
History of successful/positive change