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Willingness to Participate in Accountable Care Organization: Healthcare Managers' Perspective

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Abstract

This study examines how healthcare managers responded to the *accountable care organization* (ACO). The effect of perceived benefits and barriers of the commitment to develop a strategic plan for ACOs and willingness to participate in ACOs is analyzed, using organizational social capital, health information technology uses, health systems integration and size of the health networks, geographic factors and knowledge about ACOs as predictors. Propensity score matching and analysis is used to adjust the state- and regional variations. When the number of perceived benefits is greater than the number of perceived barriers, healthcare managers are more likely to reveal a stronger commitment to develop a strategic plan for ACO adoption. Healthcare managers who perceived their organizations as lacking leadership support or commitment, financial incentives, and legal and regulatory support to ACO adoption were less willing to participate in ACOs in the future. Future research should gather more diverse views from a larger sample size of health professionals regarding ACOs participation. The perspective of healthcare managers should be seriously considered in the adoption of an innovative health care delivery system. The transparency on policy formulation should consider multiple views of healthcare managers.

Keywords

propensity score; accountable care organizations (ACOs); willingness to participate; perceived benefits; perceived barriers

Introduction

Healthcare reform in the United States offers opportunities to explore the direct and indirect causal effects of policy implementation at the patient, organizational, and community levels. The Patient Protection and Affordable Care Act (PPACA) was designed to accomplish comprehensive, market-based health reform. The law seeks to increase the number of insured Americans. Furthermore, the implementation of the PPACA has facilitated the development of new healthcare delivery systems such as Accountable Care Organizations (ACOs) and Medical Homes. The development of ACOs represents an evolving idea of how quality, accountable health care should be delivered in the United States^{1,2}. This may result in expected outcomes such as the adoption of new patient-centered care principles and health information technologies for improving the overall effectiveness and efficiency of the healthcare delivery system.

This research examines how perceived benefits and barriers will affect the level of commitment of healthcare managers to developing ACOs and their willingness to participate in ACOs. More specifically, this study analyzes the influence of the perceived benefit-barrier gap among hospitals on the level of commitment to develop a strategic plan for ACOs while the propensity score for ACO development at the state level is simultaneously considered. The study analyzes knowledge about ACOs, hospital organizational factors such as the use of electronic medical records, system integration, organizational social capital, established health networks, and urban location affecting participation in ACOs.

The statistical control of confounders or adjustment for biased selection in social science research has led to the development of propensity score matching and analysis. Numerous applications of standardization methods similar to propensity score methodology have been found in demographic techniques^{3,4}, econometrics as using two-step regression and instrumental variable method^{5,6}, epidemiologic outcome research such as risk adjustments⁷⁻¹², and multilevel modeling¹³⁻¹⁶. It is postulated that the perceived benefit-barrier gap, knowledge about ACOs, and commitment to develop ACOs may influence the willingness to participate in ACOs while the propensity score for ACO development at the state level is considered as an adjuster or control variable. It is also assumed that the organizational and system features will only indirectly influence the willingness to participate in ACOs via the commitment to develop a strategic plan for ACOs.

Background

ACOs are provider-run groups of physicians, hospitals, and other healthcare providers who voluntarily join together to provide coordinated high quality care to their Medicare patients¹⁷. The ACO's main goal is to promote accountability for the care of Medicare beneficiaries by requiring coordinated care for all services provided under Medicare fee-for-service, and encouraging investment in information technology infrastructure and restructured care processes for cost containment purposes¹⁸. One main foundation of ACOs is their focus on the patient. Successful ACOs need to emphasize on quality improvement, the provision of coordinated care, and the right information to patients and all healthcare providers at the point of care¹⁹. Quality is measured based upon 33 quality measures across four domains. These four domains are the patient experience, coordination of care and patient safety, preventative health, and caring for at-risk populations. ACOs may take a variety of organizational forms, including integrated delivery systems, primary care or multispecialty medical groups, hospital-based systems, and even contractual or virtual networks of physicians, such as independent practice associations²⁰.

Medicare offers three ACO programs: (1) the Medicare Shared Savings Program; (2) the Advance Payment Initiative; and (3) the Pioneer ACO Model. The Medicare Shared Savings Program rewards ACOs on their ability to reduce health care costs while meeting quality performance standards. The Advance Payment Model was designed for physician-based and rural providers who join together to provide better quality care to their Medicare patients. The Pioneer ACO Model includes organizations with experience in offering coordinated, patient-centered care, and operating in ACO-like arrangements. The main differences between the Pioneer model and the Shared Savings Model are that the Pioneer model allows

the ACO to rapidly move from a shared savings to a population-based payment model and generally applies a higher level of shared savings and risk²¹.

Despite the fact that many healthcare organizations have first declined the opportunity to participate in the Pioneer ACO Model and the Medicare Shared Savings Program, as of May 2012, Leavitt Partners identified 221 ACOs in 45 states²². The reported number includes both Centers for Medicare and Medicaid Services (CMS) and private sector ACOs. More than 2.4 million Medicare beneficiaries are receiving healthcare services from providers participating in such initiatives. Even though a large variation exists in the structural models used by the different ACOs, the question that arises is why healthcare managers are choosing to adopt or not to adopt an ACO?

According to a recent survey conducted by the Health Research and Educational Trust²³ to assess hospitals readiness to participate in ACOs in providing accountable, population-based care, 75 percent of respondents said they were not exploring the ACO model at all, and another 12 percent were unsure. Thus, considering this as a natural experimentation in policy analysis, researchers could posit a timely and pertinent question in regard to healthcare managers' perceived benefits and barriers for implementing ACOs from an organizational ecology perspective. To answer this question, it is imperative to identify the organizational and community contexts that may serve as predictor variables for estimating the propensity of high likelihood for adopting an ACO at the state level. In turn, a causal model of determinants of healthcare managers' Willingness to Participate in ACOs (WP-ACOS) using the Propensity Score Factor (PSF) can be formulated in two different approaches, 1) as the correction variable of biased selection and 2) as a latent covariate comprised of multiple ecological indicators in a predictive equation. More specifically, WP-ACOs is an endogenous variable whereas predictor variables, representing personal or organizational attributes, and PSF are covariates in regression analysis. The specifications of the two predictive models are detailed in the methods section.

Theoretical Framework

The primary research question is based on an ecological inquiry of factors influencing the propensity to participate in ACOs. The ecological research framework is adopted to estimate health organizations' likelihood of participating in ACOs at the state level or the county level, contingent upon the availability of ecological variables from sources such as the Area Resource File, Centers for Medicare and Medicaid Services' Innovation Center website, and the Kaiser Family Foundation's reports. Two analytical approaches are formulated. The first approach considers ecological and organizational contextual variables as estimators of a discrete or limited dependent variable (e.g., a classification of high or low expectation in the adoption of ACOs at the state level), serving as a correction factor or adjuster in regression analysis of the willingness to participate in ACOs. The second approach treats the likelihood of participating in ACOs as a latent exogenous variable along with other multiple observed variables or measurement indicators to predict health care managers' willingness to participate in ACOs.

Cognitive dissonance theory is used to frame the first research question: Does inconsistency in health care managers' perceptions of benefits and barriers of ACOs influence the commitment to develop a Strategic Plan for ACOs (Plan_ACOs) and the Willingness to Participate in ACOs (WP_ACOs) when personal and organizational attributes are simultaneously being considered? It is hypothesized that the existence of dissonance, when benefits are higher than the barriers perceived by health care managers, they are more likely to be committed to ACO development and ACO participation. The innovation-diffusion theory is used to frame the second research question: What are the individual, organizational, and contextual factors that may influence Plan_ACOs and WP_ACOs. It is hypothesized that health care managers' commitment to develop a strategic plan for ACOs positively influences their willingness to participate in ACOs.

Methods

Study Design

A quasi-experimental design is used. The experimental group (consisting of 8 states in Region IV) is compared to a relatively matched comparison group of the study unit from other states. In avoiding the residual confounding factor, researchers have performed multivariate modeling of the intervention effect and adjusted for potential causal influences of theoretically specified attributes on the treatment or intervention status. This risk adjustment rationale for removing confounding or biased selection effects constitutes the bedrock of propensity score analysis as performed by many researchers^{24,25}.

Analytical Approaches to Propensity Score at the State Level as a Covariate

Two state-level propensity score approaches were formed for this investigation: 1) the propensity score derived from logistic regression of high-expected ACO adoption rate on eight ecological variables; and 2) the propensity score is a weighted factor scale for a latent variable (propensity to participate at the state level). The propensity score methods are described below.

1. A Conventional Approach—Because certain organizational and community characteristics such as large hospitals and integrated care delivery systems (IDSs) in metropolitan areas are more likely to form organizational alliances and develop diversification strategies, it is necessary to perform propensity score analysis to eliminate potential biased selection factors such as the un-insurance (X_1), the aged population (X_2), region IV (X_3), urban population size (X_4), physician-population ratio (X_5), health information technology adoption (X_6), disparities index (X_7), and social capital indicator (volunteerism) in the state where health care managers work (X_8). The likelihood of having a high expectation to become involved with ACOs, a dummy dependent variable (1= high presence with two or more ACOs operated in a state in 2012 and 0= no or low presence with less than two ACOs in a state), is estimated from eight ecological and contextual variables in the propensity score analysis, using R-project.Org with the subroutine of Matchit (see Figure 1). The list of X-variables is selected and specified by the literature that the area and organizational contextual characteristics may influence the propensity to establish ACOs at the state level.

2. A Measurement Modeling Approach—An alternative approach to the propensity score development is to consider the propensity of having a high expectation of ACO involvement as a latent variable, using confirmatory factor analysis to derive a weighted factor-score scale. A one-common factor measurement model shared by eight x-variables is presented in Figure 2. Each variable's factor loading, indicating the association between each indicator and the common factor, will be estimated from the maximum likelihood estimation procedure, using SPSS-AMOS. This latent variable could be included as a covariate or adjuster with other predictor variables in the regression analysis of the two endogenous variables, Plan_ACOs and WP_ACOs.

Survey on Measurement Indicators of Individual Perceptions and Organizational Factors

An electronic-survey of healthcare managers was conducted to elicit their views on the benefits and barriers to participation in ACOs during August-September, 2012. A random sample of ten per cent from 4,000 managers from acute care hospitals was drawn. The survey was distributed through Qualtrics.Com to 400 health care managers, identified by the Health Information Management System Society (HIMSS). A total of 97 responses from different health care facilities were received. After eliminating incomplete cases, only 84 respondents, representing 84 different organizations, were included in the analysis. The survey tool contains numerous questions covering several Likert-scale measures of the theoretical constructs such as – (1) the commitment to develop a strategic plan for ACOs, willingness to participate in ACOs, perceived benefits, perceived barriers, knowledge about ACOs, and organizational social capital; 2) organizational care delivery structure in terms of systems integration and networks formed with other health care organizations; 3) health information technology (HIT) infrastructure in terms of EMR uses; and 4) contextual factors such as size and urban location. Each theoretical construct was developed and validated, using confirmatory factor analysis to determine its construct validity. Specific indexes or scales were constructed. Summary statistics and reliability of these measurements are presented in Appendix 1.

Measurement of Predictors—Several measurement scales were developed to assess healthcare managers' level of commitment to develop a strategic plan for ACOs (ranging from 1 to 4), willingness to participate in ACOs (an analog scale ranging from 0 to 10 in terms of the degree of willingness), perceived benefits (ranging from 0 to 6), perceived barriers (ranging from 0 to 8), knowledge about ACOs (a Likert-scale ranging from 1 to 4), electronic medical record system functions (EMR ranging from 0 to 5), the number of hospital or systems network affiliations (ranging from 0 to 8), systems integration (ranging from 1 to 4), and organizational social capital (a summated scale of five Likert-items ranging from 6 to 24). The benefit-barrier gap is calculated by the difference between the number of benefits and the number of barriers perceived, ranging from –5 to 6.

The unit of analysis is “individual respondent”, using structural equation modeling. The analysis is separately performed for the two propensity score measures as a covariate in the predictive model of the determinants of health care managers' Plan_ACOs and WP_ACOs: 1) the propensity score as a covariate along with other predictor variables regressed on each

endogenous variable; and 2) the propensity score, as a latent measurement model, along with other predictor variables regressed on each endogenous variable.

Findings

Propensity Score Approach

The organizational analysis has to remove confounding effects of contextual variables such as state- or regional variations in adoption of ACOs. The conventional propensity score matching and analysis was performed for 50 states plus District of Columbia. The matching analysis eliminated 9 states (Idaho, Iowa, Kansas, Maine, Montana, Nebraska, North Dakota, Oklahoma and South Dakota). The score ranges from 0.19298 for Alaska to 0.92313 for Florida. The latent variable approach to propensity score computation is not very comparable to that of the conventional propensity score matching and analysis for two reasons. First, it is based on a weighted factor-score method to account for the relative influence of each state-level predictor variable. Second, the weighted score is not constrained in the unity boundary although the transformation can be made to set it within the range of 0 to 1. Thus, the latent variable approach is not included in the analysis of the two endogenous variables.

Descriptive Analysis

This is a sub-study of a parent project, entitled “Rural Health Clinics’ Participation in Accountable Care Organizations,” funded by NIH-National Institute of Minority Health and Disparities to identify how rural health clinics in the federal Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) are responding to the ACO provision of the Accountable Care Act. A critical question was raised in regard to the comparability of Region IV to other regions in the United States. Table 2 summarizes means and standard deviations of the study variables by region. It is interesting to note that no statistically significant difference is observed, with the exception of the number of health networks formed (facilities in Region IV having twice of networks established as other regions). A caution has to be made that this finding is only based on a very small number of respondents in the survey.

Perceived Benefits and Barriers to Participate in ACOs

The survey identifies six key benefits: 1) improvement in coordinated healthcare services, 2) improvement in the patient care outcomes, 3) reduction in the hospital’s total costs, 4) increase in the hospital’s profit margins, 5) increase physicians and other providers’ participation to improve population health, and 6) other benefits. A one-way analysis of variance for the willingness to participate in ACOs was performed for each of these benefits. No statistically significant difference in WP-ACOs was found with respect to perceived benefits (Table 3).

There were eight barriers to ACO participation identified: 1) lack of leadership support or commitment, 2) inadequate financial incentives, 3) legal and regulatory barriers, 4) fear of losing autonomy, 5) lack of adequate capital for health information technology and infrastructure development, 6) inadequate number of primary care providers and specialists

available, 7) inadequate number of patient population served by the facility, and 8) no affiliation with any healthcare network. Statistical significant differences in WP_ACOs were found in the first three barriers. Those who perceived their organizations as one that lacks leadership support or commitment, inadequate financial incentives, and legal and regulatory barriers to ACO adoption were less likely to participate in ACOs in the future.

Regression Analysis of the Level of Strategic Plan for ACO Development (Plan_ACOs)

Three groups of predictors were included in the analysis of Plan_ACOs: 1) individual factors such as the knowledge about ACOs and the benefit-barrier gap, 2) organizational factors such as EMR uses, system integration, organizational social capital, number of healthcare networks established; and 3) contextual variables such as urban location and the state-level propensity score. Table 5 shows that only one predictor variable is statistically significant and positively influences Plan_ACOs: when perceived benefits are greater than perceived barriers, more respondents report their organizational commitment to develop a strategic plan for ACOs. These eight predictors together accounted for 26.1 per cent of the total variance in Plan_ACOs.

The regression analysis of WP_ACO is performed with four predictors included. Only Plan_ACOs is positively and statistically significantly related to the willingness to participate in ACOs. The predictors accounted for 15.2 per cent of the total variance in WP_ACOs (Table 5).

The regression analysis results are clearly portrayed in a path diagram, showing only standardized regression coefficients or path coefficients for the predictor variables of two endogenous variables, Plan_ACOs and WP_ACOs, simultaneously. The goodness of fit statistics of the overall model fit shows a Chi-square value of 30.870 with 27 degrees of freedom and a P-value of 0.277, GFI of 0.930, AGFI of 0.858 and CFI of 0.951, and RMSEA of 0.042. These indicate that the proposed simultaneous equation model of predictors of Plan_ACOs and WP_ACOs is a reasonably fitted model. As expected, the state-level propensity score, a contextual variable, does not significantly influence the variability in the two endogenous variables.

Implications and Conclusions

The substantive contributions of multilevel modeling could be clearly demonstrated with a carefully designed sampling approach, using propensity score analysis. The elimination of biased selection factors enables us to perform precise examination of the complex relationship between key predictors or determinants of commitment to develop a strategic plan for ACOs and willingness to participate in ACOs. The knowledge gained from this empirical investigation will help to identify the pros and cons of participation in ACOs and to improve the general knowledge about the innovativeness of delivering coordinated care and containing healthcare costs.

Two major findings are related to the important predictors of the two endogenous variables. First, when the number of perceived benefits is greater than the number of perceived barriers, health care managers are more likely to reveal a stronger commitment to develop a

strategic plan for ACO adoption. This finding implies that the payoff for the diffusion of ACOs is to demonstrate the beneficial effects of ACOs so that adopters of ACOs will be more convinced by the empirical evidence showing how ACOs could contain costs of care and improve the quality of care through a better coordinated and integrated care delivery system. This is consistent with the view of Ballard²⁶ and Berwick²⁷. Second, the commitment to developing a strategic plan for ACOs has a direct effect on the willingness to participate in ACOs. The development of a viable strategic plan for ACOs at the organizational level requires a strong commitment from the senior leadership of an organization as well as the investment in capacity building and infrastructure development such as the use of health information technology and decision support system for monitoring and evaluating population health outcomes. This finding confirms the observed issues pertaining to the implementation of ACOs as reported in a recent report of the American Hospital Association²³ and other publications^{26,27}.

This theoretically grounded and methodologically rigorous study offers a broad view on how pertinent information can shape strategic decisions of health care managers. However, there are several limitations to the present study that provide new directions for future investigation. In order to validate a model of determinants of ACO participation, it is imperative to gather more diverse views from health care professionals in all regions with both rural and urban areas. Concerted effort has to be made to generate the survey response rate of healthcare managers through the endorsement of health systems or other health professional organizations (e.g., the American College of Health Executives, Health Information Management System Society, etc.). In addition, the survey instrument has to be significantly shortened in order to capture the essence of a timely and important initiative of ACOs under the impetus of health care reform. Another consideration is that we should include facility-level data generated from the American Hospital Association (AHA) or Health Information Management System Society. Ideally, researchers could conduct a two-level study design by drawing randomly selected facilities from the AHA survey file and then selecting a random sample of healthcare managers from each facility in the ACO survey. Thus, predictor variables at the individual, organizational and state levels could be included in a comprehensive analysis of determinants of ACO participation.

Future research on the natural experimentation of innovative care delivery systems should investigate the beneficial effect of Accountable Care Organizations on quality of care, population health, and cost containment, using patient-based outcome measures and electronic medical records.

Overall, this study shows that there is no substantial variation in either Plan_ACOs or WP_ACOs accounted for by organizational and contextual predictors. The perceived gap between benefits and barriers, reflecting the dissonance on health care managers' perception on ACO adoption, plays an important role in the commitment to develop a strategic plan for ACOs and, in return, it indirectly influences the willingness to participate in ACOs via Plan_ACOs. Although ecological factors may not directly influence ACO participation, this does not necessarily cast any doubt about the lack of ecological impacts on human perceptions in the context of the adoption of an innovative delivery system. It is hoped that

this exploratory research encourages additional quantitative and qualitative studies for analyzing the determinants of ACO participation.

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Figure 1.

The Propensity Score Approach to High Expectation in ACO Participation in A State: A Conventional Approach:

Figure 2.

The Measurement Model of High Expectation to ACO Participation in A State: A Latent Variable Approach to Propensity Score

Figure 3.
Predictors of the Willingness to Participate in ACOs With the Propensity Score As An Adjuster

Table 1

The Propensity Score Matching and Analysis with High-Expected Adoption of Accountable Care Organizations (ACOs) by State

	State	Region IV	HE_ACO	Propensity Score
1	Alabama	1	0	0.86046
2	Alaska	0	0	0.19298
3	Arizona	0	1	0.36021
4	Arkansas	0	0	0.29953
5	California	0	1	0.47567
6	Colorado	0	0	0.30197
7	Connecticut	0	0	0.50394
8	DC	0	0	0.54926
9	Delaware	0	0	0.43616
10	Florida	1	1	0.92313
11	Georgia	1	1	0.89567
12	Hawaii	0	0	0.44173
14	Illinois	0	1	0.48695
15	Indiana	0	1	0.30586
18	Kentucky	1	1	0.85773
19	Louisiana	0	0	0.35612
21	Maryland	0	0	0.55485
22	Massachusetts	0	1	0.50958
23	Michigan	0	1	0.25019
24	Minnesota	0	1	0.28057
25	Mississippi	1	1	0.83651
26	Missouri	0	0	0.28896
29	Nevada	0	0	0.51181
30	New Hampshire	0	1	0.34412
31	New Jersey	0	1	0.43061
32	New Mexico	0	0	0.25554
33	New York	0	1	0.68055
34	North Carolina	1	1	0.88091
36	Ohio	0	0	0.32047
38	Oregon	0	0	0.23302
39	Pennsylvania	0	1	0.35202
40	Rhode Island	0	0	0.50394
41	South Carolina	1	1	0.85773
43	Tennessee	1	1	0.88786
44	Texas	0	1	0.32830
45	Utah	0	0	0.25202
46	Vermont	0	1	0.26016
47	Virginia	0	0	0.44432

	State	Region IV	HE_ACO	Propensity Score
48	Washington	0	0	0.30675
49	West Virginia	0	0	0.31397
50	Wisconsin	0	1	0.21121
51	Wyoming	0	0	0.27071

Note: High expected adoption rate = 2 or more ACOs in the state. Low expected adoption rate < 2 ACOs. Nine unmatched cases include: Idaho, Iowa, Kansas, Maine, Montana, Nebraska, North Dakota, Oklahoma, and South Dakota.

Table 2

Means and Standard Deviations of the Study Variables by Region for 84 Respondents

Variable	Region IV ⁺	Other Region	F-value
	Mean SD	Mean SD	
Propensity score (0 to 1)	0.890 0.249	0.331 0.135	220.816*
Perceived ACO Benefits (0 to 5)	4.308 0.947	3.380 1.735	0.137 (NS)
Perceived ACO Barriers (0 to 7)	1.539 1.761	1.775 2.173	0.650 (NS)
BB_gap	2.769 2.006	1.761 2.452	1.954 (NS)
Level of knowledgeable about ACO (0 to 3)	1.462 0.877	1.662 0.940	0.509 (NS)
Urban (%)	0.692 0.480	0.606 0.492	0.343 (NS)
Rural health clinics affiliation (%)	0.462 0.519	0.225 0.421	3.217 (NS)
EMR level (0 to 5)	0.323 1.639	3.507 1.664	0.310 (NS)
Systems integration	3.615 1.325	3.401 1.902	0.141 (NS)
No. of health networks	4.384 2.256	2.056 1.963	14.763*
Plan_ACOs (1 to 4)	2.615 0.768	2.732 1.055	0.145 (NS)
Org. Social Capital	18.077 3.499	18.507 2.848	0.233 (NS)
Willingness to participate in ACOs (1 to 10)	5.231 1.739	5.014 3.770	0.880 (NS)
Number	13	71	0.041 (NS)

Notes:

⁺ Region IV includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

* Statistically significant at 0.05 or lower level.

NS = not statistically significant.

Table 3
One-Way Analysis of Variance for the Willingness to Participate in ACOS (WP_ACOs) by Specific Perceived Benefits

Perceived Benefits	Mean WP ACOs		SD WP ACOs		F-value
	With a benefit	Without a benefit	With a benefit	Without a benefit	
Improvement in coordinated health care services	4.904	3.076	5.281	4.199	0.225 (NS)
Improvement in the patient care outcomes	5.010	3.054	5.107	4.833	0.914 (NS)
Reduction in the hospital's total costs.	4.794	3.117	5.810	4.546	0.255 (NS)
Increase in the hospital's profit margins	5.145	3.387	4.773	3.963	0.174 (NS)
Increase physicians and other healthcare providers' participation to improve health	5.032	3.212	5.095	4.436	0.005 (NS)
Other benefit	5.909	4.721	4.918	3.332	0.753 (NS)

Note:
* NS = not statistically significant at 0.05 or lower level.

Table 4
One-Way Analysis of Variance for the Willingness to Participate in ACOS (WP_ACOs) by Specific Perceived Barriers

Perceived Barriers	Mean WP_ACOs With a barrier	SD WP_ACOs Without a barrier	F-value
Lack of leadership support or commitment	2.615	5.493	2.399
Inadequate financial incentives	3.581	5.906	2.399
Legal and regulatory barriers	3.636	5.548	3.215
Fear of losing autonomy	4.000	5.206	3.098
Lack of adequate capital for HIT infrastructure	4.313	5.221	2.960
Inadequate number of PCPs and other specialists	5.136	5.016	2.916
Inadequate number of patient population served by the facility	4.474	5.215	3.356
Not having affiliated with any healthcare networks	4.750	5.097	2.896

Note:

* Statistically significant at 0.05 or lower level.

NS = not statistically significant.

Table 5

Summary Statistics from Regression Analysis of the Level of Strategic Plan for ACO Development (Plan_ACOs) and the Willingness to Participate in ACOS (WP_ACOs) by Selected Predictors

Predictors	Standardized Regression Coefficient	Unstandardized Regression Coefficient	Standard Error	T-value
<u>Plan_ACOs predicted by</u>				
EMR	−0.014	−0.009	0.067	−0.129
Systems integration	−0.042	−0.024	0.063	−0.378
Org. social capital	−0.053	−0.018	0.034	−0.546
No. of health networks	0.188	0.088	0.050	1.743
Knowledge about ACOs	0.055	0.060	0.107	0.563
<i>Benefit-barrier gap</i>	<i>0.381</i>	<i>0.161</i>	<i>0.042</i>	<i>3.867*</i>
Urban location	−0.198	−0.405	0.211	−1.917
Propensity score	−0.159	−0.679	0.418	−1.625
R-square value	0.261			
<u>WP_ACOs predicted by</u>				
Benefit-barrier gap	0.042	0.062	0.165	0.376
Plan_ACOs	0.343	1.192	0.395	3.020*
Knowledge about ACOs	−0.164	−0.622	0.387	−1.608
Propensity score	−0.040	−0.594	1.508	−0.394
R-square value	0.152			

Note:

* Statistically significant at 0.05 or lower level.

Goodness of fit statistics for the model includes: 1) Chi-square= 30.870 with 27 degrees of freedom and P=0.277; 2) GFI = 0.930, AGFI =0. 858, and CFI = 0.951; and 3) RMESEA = 0.042.

Appendix 1

Summary Statistics of the Measurement Scales Used

Measure	Items/Scale	Mean	SD	Cronbach's Alpha Coefficient	Average Intra-Class Correlation Coefficient
Organizational Social Capital	6/ Likert scale (0 to 24)	18.440	2.939	0.849	0.839
Electronic Medical Record Uses	5/ Yes-No (0 to 5)	3.460	1.639	0.785	0.785
Systems Integration	5/ yes-no (0 to 5)	3.441	1.819	0.847	0.847
Perceived Benefits	6/ yes-no (0 to 6)	3.655	1.533	0.611	0.611
Perceived Barriers	8/ yes-no (0 to 8)	1.738	2.106	0.800	0.800
Benefit-Barrier Gap	Total benefits-total barriers	1.917	2.406		
Knowledge About ACOs	1/ Likert scale (1 to 4)	2.631	0.929		
Health Networks	8/ yes-no (0 to 8)	2.417	2.169		
Plan_ACOs	1/ Likert scale (1 to 4)	2.714	1.013		
WP_ACOs	1/ Analog scale (0 to10)	5.048	3.523		