Trust in Insurers and Access to Physicians: Associated Enrollee Behaviors and Changes over Time

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Objective. Most studies of trust in the medical arena have focused on trust in physicians rather than trust in health insurers, and have been cross-sectional rather than longitudinal studies. This study examined associations among trust in a managed care insurer, trust in one's primary physician, and subsequent enrollee behaviors relating to source of care. The study also documents changes in trust in the study population following the disclosure of physician incentives.

Study Setting. A medium-sized (300,000 member) HMO, located in the southeastern United States.

Data Collection. One to two years after baseline, we randomly resurveyed a quarter ($n = 558$) of the initial study population of a large intervention study designed to measure the impact of disclosing HMO financial incentives on patient trust. This follow-up study was also designed to measure the effects of trust on source of care.

Analyses. Multivariate regression analyses of survey data examined associations between baseline levels of trust and subsequent enrollee behaviors such as using a non-PCP physician without a PCP referral, as well as changes in trust since baseline.

Results. High baseline insurer trust was associated with a lower probability of a patient seeking care from a non-PCP physician (OR = 0.55, 95 percent CI: 0.33, 0.91). No long-term effects of prior disclosure of financial incentives were observed. Overall, there was a slight increase in overall trust in the insurer (1.8 percent, $p < .05$) but no change in trust in one's primary physician. The increase in insurer trust was primarily restricted to 23 percent of the enrollees who had changed their PCPs following the baseline survey (6.6 percent, $p < .01$). In multivariate analyses, changing physicians was the most significant predictor of increased insurer trust (OR = 2.17, 95 percent CI: 1.37, 3.43).

Conclusions. Trust in one's insurer seems to change over time more than trust in one's primary physician, and is predictive of enrollee behaviors such as seeking care from other physicians. The ability to change physicians seems to increase trust in the insurer.

Key Words. Patient trust, longitudinal changes, enrollee behavior, health insurance, primary care physicians

Many concerns exist about the extent to which managed care structures and techniques affect patients' trust in physicians and health insurers (Anders

1996; Mechanic and Schlesinger 1996). To explore these concerns, there has been burgeoning interest in recent years in empirical studies of trust (Hall et al. 2001; Hall, Zheng et al. 2002). Trust is one indicator of the quality of relationships with institutions, and assesses dimensions not assessed by objective quality or subjective satisfaction measures (Hall, Dugan et al. 2002; Zheng et al. 2002).

Substantial literature now addresses factors that influence trust or attitudes that are correlated with trust (Zheng et al. 2002; Kao et al. 1998; Safran et al. 1998; Anderson and Dedrick 1990). However, less is known about the effects of trust, and most of what is known about trust comes from cross-sectional or (correlation) studies rather than longitudinal studies, which can reveal more about causal relationships (Hall, Dugan et al. 2002; Pearson and Raeke 2000). Based mainly on cross-sectional self-reports, physician trust is positively correlated with adherence to treatment recommendations, not changing physicians, not seeking second opinions, willingness to recommend a doctor to others, fewer disputes with the physician, perceived effectiveness of care, and improvement in self-reported health (Zheng et al. 2002; Caterinicchio 1979; Safran et al. 1998; Thom et al. 1999). Trust in insurers is positively correlated with less desire to change insurers and fewer reported disputes with the insurer (Zheng et al. 2002). A recent study examines differences in predictors of physician and insurer trust (Balkrishnan et al. 2003). The study finds commonalities between these two types of trust, but also important differences.

However, these studies rely almost entirely on self-reported behaviors and events rather than using independently observed outcome measures. In addition, most of the work to date on trust addresses trust in physicians. Trust in medical institutions such as health plans has been largely neglected, in contrast with the growing body of empirical work measuring the dimensions, levels, determinants, and consequences of trust in business organizations (Kramer 1999; Kramer and Tyler 1996), governmental entities (Braithwaite

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and Levi 1998), financial institutions, and other commercial or social entities (Govier 1997; Barber 1983). Only recently have researchers begun to consider the level of trust that members have in managed care organizations (Mechanic and Schlesinger 1996; Mechanic 1996).

This study is designed to better understand how trust in insurers changes over time and how these changes relate to enrollees' behaviors regarding access to physicians. Specifically, this study assesses changes in enrollees' trust levels over a span of one to two years, and examines how these changes relate to managed care members' decisions about which primary care and specialist physicians to see. This study also follows up on the extended effects of a prior intervention that disclosed to managed care members how their physicians are paid (Hall, Dugan et al. 2002). Based on our previous work as well as the previous studies in this area, we hypothesize that increased trust in an HMO gatekeeping insurer will be associated with less use of nonprimary care physicians (PCPs), and less use of such physicians without a PCP referral. A secondary hypothesis is that trust in an insurer will be more likely to change over time compared to trust in one's PCP.

STUDY DESIGN

Sample Selection and Survey Measures

This study builds on an earlier study that examined the impact of disclosing physician incentives to managed care enrollees. In the initial study, a medium-sized (300,000-member) HMO was recruited, with membership located across a single, southeastern state, consisting almost entirely of employee groups. This HMO sold two similar plans side by side. One had a closed-panel independent practice association structure that paid its physicians by capitation, and the other was an open-panel point-of-service plan that paid physicians discounted fee-for-service with a mixed quality/cost incentive bonus. The two plans had nearly identical physician networks statewide, and there were no major differences among the types of purchasers of each plan or in how the plans were marketed. Equal numbers of members from each plan were randomly selected from among adult members (only 1 per household) who had been with the plan at least two years and had seen a primary care physician at least twice. We attempted to recruit equal numbers of members who had been with the insurer two to four years and more than four years.

Baseline telephone surveys were conducted in two batches, separated by a year, beginning in September 1999 and September 2000, with an initial

response rate of 1,918 or 59.1 percent of those who were eligible. (Further details are reported in Hall, Dugan et al. 2002.) Subjects were asked about trust in their primary physician, trust in their insurer, their knowledge of financial incentives, the relationship, characteristics, and past experiences with their primary care physician and with the insurer, their health status and medical history, and their demographics. Trust questions came from two independently validated scales (physician trust and insurer trust) developed earlier by our team (Hall, Zheng et al. 2002; Zheng et al. 2002). Also, a random selection of the overall sample was informed of the type of incentive payments made to their physician.

In this follow-up study conducted in early 2002, we divided the initial sample into four groups, depending upon which doctors they had seen since the baseline survey: (1) none ($n = 765$), (2) only their primary care physician (PCP) ($n = 32$), (3) another doctor within the network ($n = 1,032$), or (4) a doctor outside the network ($n = 83$). Although we attempted to stratify the sample evenly across the four groups, there were not sufficient numbers of eligible subjects to do so, so we selected all available members in groups 2 and 4, but sampled randomly from groups 1 and 3 up to a quota of 100 in group 1, and 300 in group 3. Overall, we attempted to recontact 1,121 of the original subjects, with the following disposition: 219 (19.5 percent) were no longer with the same insurer, 283 (25.2 percent) could not be contacted (wrong phone number, no answer after 15 tries, language barrier, etc.), and 166 (14.8 percent) refused or did not complete the survey, leaving 558 subjects who completed the interview, which is 77.1 percent of those contacted who were still eligible. The final sample was composed of the following four groups, depending upon which doctors they had seen since the baseline survey: (1) none ($n = 151$), (2) only their primary care physician (PCP) ($n = 26$), (3) another doctor within the network ($n = 326$), and (4) a doctor outside the network ($n = 55$). The baseline characteristics of this stratified random subsample were very similar to the larger initial study population (Table 1).

This follow-up survey administered the same core items regarding trust in physician and in insurer, and added new items regarding where subjects had sought care since the prior survey, and changes in their primary care physician. Trust was measured only in those individuals who had not changed insurers or PCPs because the original measures referred to the insurer and to each member's particular physician by name. To test whether this restriction biased the results, we compared baseline physician and insurer trust levels in subjects who were included and those who had changed primary care physicians or insurers. Although trust among the switchers was slightly lower,

Table 1: Descriptive Statistics of Study Population ($n = 558$)

<i>Variable</i>	<i>Mean (SD)</i>
<i>Baseline Variables</i>	
Age	46.8 (11.0)
Male gender (%)	43.6
High school education (%)	90.9
Nonwhite race (%)	17.7
Having a serious medical condition (%)	25.0
Reporting poor health status (%)	17.6
<i>Trust Variables</i>	
Trust in insurer score (out of 55)	Baseline 37.58 (7.20) Follow-up 38.27 (7.20)*
Trust in physician score (out of 50)	Baseline 42.08 (5.01) Follow-up 41.87 (5.61)
<i>Behavior Since Baseline</i>	
Changed PCPs (%)	22.9
Received care from non-PCP (%)	26.6
Used non-PCP without PCP referral (%)	10.3

*Indicates difference between baseline and follow-up was significant at $p < .05$ using analysis of variance.

the differences were not significant: Mean baseline trust scores (out of 50) in physicians were 41.6 for the included group versus 41.4 for the excluded group ($p = 0.29$); mean baseline trust scores (out of 55) in insurers were 37.5 for the included group versus 36.8 for the excluded group ($p = 0.065$).

Analyses

We examined changes in physician and insurer trust between baseline and follow-up periods using bivariate methods. We used multivariate logistic regression analysis to examine whether baseline high or low trust predicted enrollee behaviors such as seeking care from a non-PCP and using a non-PCP physician without a PCP referral. These levels of baseline trust were created from the extreme quartile baseline trust scores, and were examined for differences in the initial study (Hall, Dugan et al. 2002). Similar logistic regression models were created for predictors of increased and decreased trust, if trust significantly changed in the population. We included both key predictors that were being examined, as well as theoretically plausible confounders that were selected based on our previous analyses of predictors of trust. Details on selection of confounder variables and reasons for their

inclusion can be found elsewhere (Hall, Dugan et al. 2002; Balkrishnan et al. 2002). All models were checked for both specification (using alternate forms of models and conducting likelihood ratio tests) and violations of linear estimation assumptions (for example, there was no evidence of multicollinearity between predictor variables). All statistical analyses were conducted using the *STATA* statistical software (STATA 1999).

RESULTS

Table 1 describes both the baseline characteristics, as well as the follow-up variables of interest in this population. Nearly 23 percent of subjects had changed PCPs since baseline. Nearly 27 percent of the respondents had sought medical care from a physician besides their PCP ("used a non-PCP"), and roughly a third of these patients (10 percent of the study population) had sought care from this physician without PCP referral. There were significant differences in mean PCP physician trust (mean scores [out of 50] 42.08 and 41.87, NS) between baseline and resurvey periods respectively. However, there was a small increase in mean insurer trust across the two time periods (mean scores [out of 55] 37.58 and 38.27, $p < .05$). Further examination of change in insurer trust revealed 57 percent of the population had an increase in insurer trust, while 35 percent had a decrease in insurer trust over the follow-up period. The increase in insurer trust was also significant only among enrollees who had changed their physicians in the baseline period (mean scores [out of 55] 37.23 and 39.67, $p < .01$).

Table 2 presents the results of the multivariate logistic regression models examining predictors of seeking care from a non-PCP, and use of this physician without PCP referral. Respondents with a higher level of insurer trust at baseline were less likely to use a non-PCP (odds ratio [OR]: 0.55, 95 percent CI: 0.33, 0.91). Those with at least high school education were more likely to use a non-PCP (OR: 2.95, 95 percent CI: 1.20, 7.23). The only predictor of using a non-PCP without PCP referral was patient reporting serious medical condition at baseline (OR: 2.40, 95 percent CI: 1.27, 4.56).

Table 3 presents the results of logistic regression examining factors predicting increases and decreases in insurer trust in the study population. The most significant predictor of these changes was changing PCPs since baseline (OR: 2.17, 95 percent CI: 1.37, 3.43; increased insurer trust regression). There was a higher chance of trust increasing in the 45–64 age group relative to the 25–44 age group. Recently having changed insurer at baseline was associated

Table 2: Factors Predicting Use of Non-PCP Physician in Study Population

<i>Dependent Variable</i> ⇒ <i>Predictor Variable</i> ↓	<i>Received Care From</i> <i>Non-PCP</i>	<i>Sought Other Physician</i> <i>without PCP Referral</i>
Age category 45–64	1.34 (0.85, 2.08)	1.61 (0.85, 3.08)
Age category 65+	1.14 (0.37, 3.50)	2.32 (0.57, 9.48)
Nonwhite race	1.03 (0.54, 1.98)	0.70 (0.26, 1.89)
High school education	2.95 (1.20, 7.23)	2.03 (0.59, 6.96)
Serious medical condition	1.30 (0.79, 2.12)	2.40 (1.27, 4.56)
Poor health status at baseline	1.17 (0.93, 1.47)	1.01 (0.91, 1.45)
High baseline insurer trust	0.55 (0.33, 0.91)	0.54 (0.26, 1.14)
Low baseline insurer trust	0.98 (0.59, 1.64)	1.25 (0.63, 2.46)
High baseline physician trust	0.99 (0.60, 1.62)	0.66 (0.32, 1.35)
Low baseline physician trust	0.71 (0.41, 1.21)	0.80 (0.39, 1.63)
Changed PCPs since baseline	0.78 (0.47, 1.31)	1.47 (0.77, 2.80)
Capitated group	1.23 (0.73, 2.06)	1.26 (0.62, 2.53)
Intervention arm	0.75 (0.40, 1.41)	0.92 (0.39, 2.17)
2000 versus 1999 cohort	0.73 (0.48, 1.11)	1.33 (0.74, 2.39)

Note: Odds ratios with 95% confidence intervals are presented. Bolding indicates significant estimate at $p < .05$. Regression models are logistic. Age category ≤ 25 years was excluded due to perfect prediction. Age category 25–44 years was the reference category.

Table 3: Factors Predicting Change in Insurer Trust in Study Population

<i>Dependent Variable</i> ⇒ <i>Predictor Variable</i> ↓	<i>Increase in Insurer</i> <i>Trust (57%)</i>	<i>Decrease in Insurer</i> <i>Trust (35%)</i>
Age Category ≤ 25 years	0.46 (0.11, 1.94)	2.09 (0.54, 8.03)
Age Category 45–64	1.69 (1.12, 2.55)	0.53 (0.35, 0.81)
Age Category 65+	0.99 (0.34, 2.85)	0.77 (0.26, 2.21)
Nonwhite race	0.73 (0.41, 1.31)	1.27 (0.72, 2.26)
High school education	0.56 (0.29, 1.08)	1.54 (0.77, 3.05)
Serious medical condition	0.82 (0.82, 1.31)	1.31 (0.82, 2.08)
Poor health status at baseline	0.99 (0.80, 1.23)	1.03 (0.83, 1.28)
High baseline insurer trust	0.43 (0.28, 0.67)	1.80 (1.16, 2.79)
Low baseline insurer trust	2.70 (1.60, 4.56)	0.49 (0.29, 0.83)
High baseline physician trust	1.37 (0.87, 2.15)	0.80 (0.50, 1.26)
Low baseline physician trust	0.77 (0.48, 1.25)	1.39 (0.86, 2.27)
Capitated insurance	1.15 (0.71, 1.86)	0.86 (0.53, 1.39)
Physician incentives disclosed	1.27 (0.72, 2.27)	0.90 (0.50, 1.62)
Baseline in 2000 versus 1999	1.15 (0.78, 1.67)	0.78 (0.53, 1.14)
Changed PCPs since baseline	2.17 (1.37, 3.43)	0.39 (0.24, 0.64)
Used other physician without PCP referral	0.77 (0.42, 1.39)	1.35 (0.74, 2.46)

Note: Odds ratios with 95% confidence intervals are presented. Bolding indicates significant estimate at $p < .05$. Regression models are logistic. Age category 25–44 years was the reference category.

with greater probability of having lower insurer trust at follow-up (OR: 1.69, 95 percent CI: 1.12, 2.55).

There were no other predictors of decreased and increased physician trust, except that having low baseline insurer trust was associated with increased probability of increase in insurer trust with time, a finding that might be more suggestive of a “regression to the mean.”

DISCUSSION

This is the first study to our knowledge that describes managed-care related behaviors associated with trust, such as enrollees' use of non-PCPs with or without referral. Also, this is the first published study using a validated multi-item instrument of changes in trust in an insurer over a period of time. Additionally, because the study followed up on an earlier randomized study of the disclosure of financial incentives, it was able to track the disclosure's long-term effects on changes in trust in one's physician and in the insurer. There are several notable findings and nonfindings.

First, over this one- to two-year follow-up period, there was a statistically significant increase in trust in the insurer, but not trust in members' physicians. This differential is especially noteworthy considering the greater latitude subjects had in choice of physician compared to choice of insurer. Many people are locked into the insurer selected by their employer, but they are free to change PCPs if they do not trust the one they have. Thus, over time, one might expect physician trust to improve more than insurer trust. We are not able to assess what might account for the increase in insurer trust, but this confirms earlier analysis and research that indicates that insurer trust is more amenable to change than physician trust (Hall et al. 2001; Kao et al. 1998). This difference is consistent with the theory that physician trust is grounded more in the fundamental psychology of seeking and submitting to care in a state of vulnerability, regardless of actual experiences during treatment, whereas insurer trust is affected more by the particular structure or behavior of their health plan. However, there are many other possible explanations for this observed difference in the two types of trust, which are measured by two distinct instruments and therefore are not directly comparable. Also, it is important to note that our sampling method differed for insurer and physician trust, producing two somewhat different populations. All members who remained with the insurer were resurveyed for insurer trust, but only those

who remained both with the same insurer and same physician were resurveyed for physician trust.

Regarding the increase in insurer trust, this appears to be partially due to a regression to the mean, but since the drifts from the two extremes do not cancel each other out, this suggests that the initial extremes are greater on the low end than the high end. In other words, perhaps over time, there was a greater tendency for people to learn that this insurer was not as untrustworthy as they might have thought, than there was for people to learn the opposite. Again, this is only speculative.

In any event, even controlling for baseline extremes and other relevant factors, changing one's primary care physician since baseline was associated with a significant increase in insurer trust. This directly confirms a key assumption about the structure of managed care networks, namely, that the ability to choose one's physician improves trust.

Other common assumptions about managed care were not confirmed. We found no significant association between change in insurer trust and the type of physician payment (capitation versus mixed incentive fee-for-service) or whether members had been told (in the earlier intervention phase of this study) about how their physicians were paid. The latter nonfinding is particularly significant because our initial report also found no immediate effect on trust (Hall, Dugan et al. 2002). We speculated then that impacts on trust may not be felt for a while, until patients have a chance to confront the reality of potentially distorting incentives in the context of a treatment encounter, but this did not occur to a measurable extent in this patient population.

Finally, this study sheds light on the consequences of insurer trust in a managed care setting. Members with high-baseline insurer trust were significantly less likely to seek care from someone other than their primary care physician. This finding is consistent with others that suggest that mandatory gatekeeping restrictions are not essential because patients, in general, are inclined on their own to access care through their PCPs (Ferris et al. 2001; Joyce et al. 2000; Forrest et al. 2001; Grumbach et al. 1999). Our finding suggests that this is more likely to be true within health plans that, overall, are more trustworthy. Therefore, although we were not able to measure the impact of trust on costs of care, it is reasonable to suppose that trust promotes more cost-effective treatment. These and other possible implications of these findings require further study, however.

Certain limitations of the study deserve to be noted. Approximately 25 percent of the initial study sample was excluded because of changing PCPs or

insurers. However, baseline trust levels were not significantly different among excluded subjects. Additionally, although we controlled for the two baseline cohorts (1999 versus 2000), this is a potential limitation since patients in the 1999 cohort had greater “exposure time” for changes in trust. Finally, because of the limited number of independent variables measured in our follow-up survey, our findings on predictors of changes in insurer trust are preliminary, and merit more detailed exploration using more comprehensive models and larger samples.

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