

**Final Report R40MC07843**  
**Health Plan Turnover and Disenrollment, Health Care Quality and Expenditures in SCHIP**

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## **I. Introduction**

Most states in the nation have experienced health plan turnover in their public health insurance programs in recent years due to health plan exits/acquisitions (Fairbrother et al., 2004; Felt-Lisk et al., 2001; Roohan et al., 2000). When health plans exit an SCHIP program, their enrollees must either transfer to remaining or new health plans or disenroll from the program. In contrast to voluntary transfers based on beneficiary preference or medical need, these involuntary transfers may have a negative impact on beneficiaries. In particular, the involuntary transfers may jeopardize access to and continuity of health care because of the need to change primary care practitioners (PCPs) and to adjust to the new plan or procedures (Weber et al., 2005; Smith and Bartell, 2004; Thompson et al., 2003; Felt-Lisk et al., 2001; Cunningham and Kohn, 2000; Burstein et al., 1999). When health plans exit the program, barriers to remaining enrolled may also occur. For example, transitions to a new health plan may require that the family select a new PCP for their child, which may pose a barrier for continued enrollment in the SCHIP program.

First, our study investigated disenrollment from SCHIP due to health plan turnover in one of the nation's most populous states. Several studies (Shenkman et al., 2002; Dick et al., 2002; Miller et al., 2004; Phillips et al., 2004; Sommers, 2005) have examined disenrollment from SCHIP, but none has focused on disenrollment due to health plan turnover. The examination of the impact of health plan exits on disenrollment is particularly important for SCHIP that rely almost exclusively on managed care arrangements. We also built on the limited existing literature to analyze the quality of care provided to enrollees and their health care expenditures before and after the transfer.

Our study examined the experiences of both healthy children and children with special healthcare needs (CSHCN) and controlled explicitly for relevant case-mix or illness burden. We used a potential outcomes approach with a treatment group (i.e., those enrolled in health plans that exited the SCHIP) and a control group (i.e., those enrolled in non-exiting health plans). Our estimation technique explicitly corrected for adverse selection to the health plans that exited the SCHIP through the use of an instrumental variable approach.

The results from this project include (1) an oral presentation on health plan exits and disenrollment at Academy Health's Annual Research Meeting, in Washington, D.C., on June 9, 2008; (2) a manuscript preparation on health plan exits and disenrollment; (3) attainment of PhD candidacy for Mujde Z. Erten (research assistant on this project) on March 23, 2009 through her work with Professor Terza (an Investigator on this project) building on Professor Terza's earlier work on estimation techniques for quasi-experimental data coupled with estimation techniques required for this study; and (4) continuing technical and empirical work related to the impact

health plan exits have on health care expenditures (including overall, inpatient, outpatient and emergency department) and quality of care.

## **II. Review of the Literature**

Little information is available about the experience of enrollees who are forced to switch their health plan because of plan exit/acquisition in SCHIP programs. Earlier studies about plan exits focused on commercial health plan exits from Medicaid programs and examined issues related to the quality of care (Felt-Lisk et al., 2001; Roohan et al., 2000; Thompson et al., 2003). These studies were motivated primarily by the repeal of “75/25” rule. The “75/25” rule was based on the notion that a health plan serving large commercial populations (comprising at least 25 percent of the membership) would provide the same high quality care to its Medicaid beneficiaries as it provided to its commercial enrollees.

Our study considered plan turnover in SCHIP program and has a broader perspective than these earlier studies because it: (1) focused on the exit/acquisition of health plans serving public programs only and health plans serving both public programs and commercial enrollees; (2) examined the experiences of both healthy children and CSHCN; (3) relied on estimation techniques that accounted for the non-experimental nature of the information used; (4) used instrumental variables to correct for the possible adverse selection to the health plans that exited the SCHIP; (5) examined disenrollment due to health plan exits; and (6) is continuing to investigate both changes in enrollees’ health care expenditures and changes in the quality of care that are attributable to health plan exit using a robust quasi-experimental pre-post design with treatment and control groups.

Although previous studies neither provide complete answers to our research questions nor focus exclusively on children, the studies present some evidence regarding the effects of health plan turnover in public health insurance programs. One study, using interview data obtained from patients seen in five emergency departments in Boston, shows that those changing health plans were more likely to delay seeking care than patients that do not change their health plan (Burstein et al., 1999). Another study, using data from 1996-1997 Community Tracking Study household survey on privately insured populations, finds that those who changed health plans were twice as likely as those who stayed with their plans to change their usual source of care (Cunningham and Kohn, 2000). Further, privately insured individuals who switched health maintenance organizations changed their usual source of care more frequently than individuals who switched between other types of health plans. Another study, using data from the 2001 Community Tracking Study on adults, reports that individuals who changed their health plan were more likely to use the ED than those who did not switch their plan (Weber et al., 2005).

Other studies examining the experiences of enrollees newly entering health plans are also instructive. One study of a managed care organization in Rochester, New York finds that new enrollees had lower rates of breast cancer screening, a higher likelihood of a physician visit and higher expenditures than those who were not new to the plan (Franks et al., 2003). Another study reports increased access problems – such as unmet need and postponement of needed medical care – for new enrollees compared to those with no usual source of care or to those enrolled in the health plan for longer periods of time (Smith and Bartell, 2004). Additionally, new enrollees

were found to have more emergency department and outpatient visits than those with either no usual source of care or a continuous source of care.

In terms of disenrollment, one of the earlier studies found that healthy children are more likely to disenroll from and less likely to re-enroll in SCHIP when compared to children with chronic conditions (Shenkman et al. 2002). A second study showed that passive re-enrollment, where families do not need to submit additional paperwork for recertification, but rather, simply must continue to pay premiums, greatly reduces disenrollment from SCHIP (Dick et al. 2002). Studies have also shown that cultural congruence between providers and SCHIP beneficiaries (Phillips et al. 2004) and coordinated administration of Medicaid and SCHIP programs (Sommers 2005) improve retention in SCHIP. Although these studies provide useful information on disenrollment from SCHIP, none has focused on disenrollment due to health plan exit.

Disenrollment from SCHIP that leads to lack of health insurance coverage is of concern since health insurance coverage has been shown to improve access to and receipt of appropriate care (Kenney 2007; Dick et al. 2004; Szilagyi et al. 2004; Newacheck et al. 1998). Health care outcomes such as access to care, unmet needs, keeping up with vaccination schedules, and health care utilization patterns deteriorate for children who have several breaks in insurance coverage (Federico et al. 2007; Olson et al. 2005; Smith et al. 2006). The studies on disrupted insurance coverage point to a similarity in health care outcomes for those with disruptions in insurance coverage and for those who are continuously uninsured.

Brief periods of disenrollment are also a concern since it may lead to discontinuity in care. The beneficial effects of continuity of care such as reduced emergency department use and hospitalization (Christakis et al. 2001; Gill and Mainous 1998), increased use of preventive services (Frank et al. 1995; Xu 2002; Flocke et al. 1998; O'Malley et al. 1997), and reduced unmet health care needs (Cunningham and Trude 2001) and health care expenditures (Weiss and Blustein 1996; Maeseneer et al. 2003) may be lost in cases of disenrollment that leads to discontinuity in care. Further, the sense of trust that patients enjoy through a sustained relationship with the health care professionals and health care system (Starfield 1998) may be lost when disenrollment leads to discontinuity in care. This sense of trust may be particularly important for those with chronic conditions (Hall et al. 2001) and may reduce disparities in health care (O'Malley et al. 2004; Shea 1992).

### **III. Study Design and Methods**

This study used information from SCHIP program of one of the four most populous states in the nation. The person-level enrollment datasets for the SCHIP program was used to identify the treatment and comparison groups. The person-level health care claims and encounter datasets were used in conjunction with the Clinical Risk Groups (CRGs) software to characterize the enrollees' health status.

The CRGs is a clinical system that classifies individuals into mutually exclusive health status categories (Neff et al., 2001). The nine core CRG health status categories are ordered from least to most complex conditions. The first core CRG group ("healthy") includes those with no health care use and those with minor acute illnesses. The second CRG category ("significant acute") is

comprised of serious acute illnesses that may place the child at risk for developing a chronic condition. The rest of the core CRG categories represent chronic conditions with increasing complexity, ranging from minor chronic, to moderate and major chronic conditions.

As defined by MCHB, CSHCN “are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and also require health and related services of a type or amount beyond that required by children generally” (MCHB, 1995). We used chronic CRG categories in identifying CSHCN.

Other data sources that were used for this study include the National Association of Insurance Commissioners (NAIC) Annual Statements and the Area Resource File (ARF). The measures of the financial performance of health plans were derived from the information contained in the NAIC Annual Statements. The ARF and SCHIP enrollment files were used to compile community level variables such as percent of population residing in urban areas and percent of population that is non-white.

Our primary aim in this study was to estimate the difference in the likelihood of disenrollment that could be exclusively attributed to health plan exit. We started with a treatment group (i.e., those enrolled in health plans that exited the SCHIP) and a control group (i.e., those enrolled in non-exiting health plans). The fact that we were working with a non-random observational data was a primary challenge for us to get a robust estimate. To cope with this challenge, we build on earlier work conducted by Terza (2008a, 2008b) and we took a potential outcomes (i.e., a counterfactual) approach. In this context, we defined the difference in the likelihood of disenrollment that could be exclusively attributed to health plan exit to be the average difference in the likelihood of disenrollment that would result from switching between the following two counterfactual scenarios: (1) one in which every member of the population was a member of an exiting health plan (i.e., the counterfactual “all exit” scenario) and (2) the other in which no member of the population was a member of an exiting health plan (i.e., the counterfactual “none exit” scenario). In this definition, all confounding factors are controlled since each individual in the population has a potential disenrollment outcome in each of the plan exit scenarios. Given that all confounding factors are controlled, the resultant change in the likelihood of disenrollment can only be attributed to differences in health plan exit status.

Our estimation technique also corrected for possible adverse selection to health plans that exited the SCHIP program. Specifically, we used an instrumental variables approach within a bivariate probit model to correct for adverse selection in determining the impact of health plan exit on disenrollment. The instrumental variable that we employed in the study is the percentage change in SCHIP enrollment countywide one month before the time of the plan exit expressed as a fraction of the prior year’s SCHIP countywide enrollment. We used the enrollment datasets to construct this instrumental variable. It has been shown in the literature that a decline in enrollment in a public insurance program is an important determinant of plan exit (McCue et al. 2001; Hurley et al. 2000). It is possible that an individual’s present enrollment status may be correlated with his past enrollment status. In this study, such autoregressive individual enrollment status effects are mitigated by the countywide aggregation in the construction of the instrumental variable.

#### **IV. Detailed Findings**

Our work on disenrollment focused on two health plan exits from one of the nation's most populous states. We studied information found in enrollment and claims and encounter data for close to 200,000 children who were enrolled in SCHIP from January 2003 to April 2004. Of these children, almost 10 percent were enrolled in one of the two health plans that exited the program and the remaining children were enrolled in one of the ten remaining health plans.

First we examined the characteristics of the children who were enrolled in the SCHIP program. Some of the characteristics of children, such as gender distributions, did not differ between enrollees in the exiting and non-exiting health plans. Other characteristics, such as health status and age distributions and tenure in the program were different between those enrolled in the exiting and non-exiting health plans. Based on their CRG assignments, enrollees in the exiting plans tended to be healthier than those in the non-exiting plans. Enrollees in the exiting plans were older and enrolled in the program for longer periods of time than enrollees in the non-exiting plans. We controlled for these differences in our bivariate probit models through the use of dummy variables representing demographic characteristics and (CRG) health status.

Our bivariate probit models consisted of two probit models for two outcome variables. One of the probit models was for our main outcome variable (i.e., the disenrollment status). We also incorporated a second probit model for our auxiliary outcome variable (i.e., health plan exit status).

In general, we included individual level variables such as age, gender, and health status of children; a health plan level variable showing the plan's operating profit margin; and community variables such as percentage of population non-white, per capita income, and the percentage of urban population in the county. One of the community level variables, the Herfindahl-Hirschman Index (HHI), was developed at the regional level to capture health plan competition to enroll SCHIP beneficiaries. The HHI was defined so that a larger value would correspond to a smaller number of health plans serving the region and indicating possibly less intense competition in the region to enroll SCHIP beneficiaries.

Our probit model for the health plan exit variable included an additional instrumental variable to account for possible adverse selection to the health plans that exited the SCHIP. As described above, we used the percentage change in SCHIP enrollment countywide one month before the time of the plan exit, expressed as a fraction of the prior year's SCHIP countywide enrollment as the instrumental variable in our regressions.

First we defined disenrollees as those children who were enrolled in SCHIP prior to health plan exit but who were disenrolled for at least 3 consecutive months after the plan exit. Given this definition, we ran a series of bivariate probit models for different groups in our sample. Our first bivariate probit model was run taking into account all children in our sample, including those with short durations of enrollment (i.e., new enrollees) and those with longer durations of enrollment (i.e., those with a CRG assignment) prior to plan exit. Our second bivariate probit model focused on only those with a CRG assignment in our sample. Our third bivariate probit model took into account only those in non-chronic (i.e., healthy and significant acute) CRG

health status categories. In all of these runs, our instrumental variable was statistically significant ( $p < .001$ ) showing that there was adverse selection to exiting health plans.

We also tried to analyze results for CSHCN, i.e., for those in the chronic (minor, moderate, and major chronic) CRG health status categories separately. However, the small sample of CSHCN we have in our database especially in the health plans exiting the SCHIP program made it impossible to conduct an additional subgroup analysis for them.

The results from the auxiliary probit regressions in all of these runs showed that children enrolled in the exiting plans were less likely to be in health plans with high operating profit margin, in areas with less intense health plan competition for the membership of SCHIP children, and in areas with higher per capita income.

The results from the main probit regressions showed that children enrolled in the exiting plans were more likely to disenroll from SCHIP than children enrolled in the non-exiting plans. This result was more pronounced for the CRG subgroup ( $p = .012$ ) than for all enrollees (i.e., CRG and new enrollees) ( $p = .051$ ) and for the non-chronic CRG subgroup ( $p = .056$ ).

The results from the main probit regressions also showed that children who had been enrolled in the program for a longer period of time were less likely to disenroll from the program. Children with a CRG assignment (compared to new enrollees) and children with significant acute and (non-major) chronic conditions (compared to healthy enrollees) also were less likely to disenroll from SCHIP.

Our findings showed that children living in areas with more pronounced nonwhite populations and less intense plan competition were more likely to disenroll. In contrast, children residing in areas with a higher percentage of urban population were less likely to disenroll from SCHIP.

As a second step in our analysis, we used the bivariate parameter estimates from our probit regressions for our main outcome variable to estimate the average difference in disenrollment that could be exclusively attributed to health plan exit. When we considered all children (new enrollees and CRG group), the disenrollment rate in the “as if all were in an exiting health plan” scenario was slightly higher than it was in the “none exit” scenario. This result was barely significant ( $p = .084$ ). The disenrollment gap (i.e., the extent to which potential disenrollment was more pronounced in the “all exit” scenario compared to that in the “none exit” scenario) was statistically significant for the CRG subgroup (1.6 percentage points,  $p = .038$ ). In the case of non-chronic CRG, the disenrollment gap was (1.2 percentage points) again barely significant ( $p = .098$ ).

We repeated the bivariate probit regressions for different specifications of our study sample to understand how variation in some of these variables is changing our results. For example, in one of the specifications, we again focused on those who disenrolled for at least 3 consecutive months but excluded children who moved from SCHIP to other public insurance programs in the state during that three-month period. As before, we used parameter estimates from the main probit regression in computing disenrollment gap. Our results from this specification showed that the exclusion of children who moved to other public insurance programs in the state had a

substantial effect on our findings. The disenrollment gap was no longer statistically significant when all children or those in the non-chronic CRG subgroup were considered. The disenrollment gap was only barely significant in the CRG subgroup (1.2 percentage points,  $p=.094$ ).

In one of the other specifications, we changed our definition of disenrollment and considered those who were disenrolled for at least 2 consecutive months at the time of plan exit. Our results with this new definition were similar to our findings when disenrollment was defined as 3 consecutive months when all children and CRG subgroup was considered. In this new definition, the disenrollment gap was not statistically significant in the analysis for the non-CRG subgroup.

## **V. Discussion and Interpretation of Findings**

In this study, we controlled for individual, health plan, and community level characteristics, and non-randomness of our observational data and found some evidence that more children disenrolled from SCHIP when their health plan exited the program than when their health plan remained in the program. This result was especially true when we defined disenrollment as not being enrolled in the program for at least 3 consecutive months at the time of plan exit. One of our other findings was that the disenrollment gap mostly vanished when children who had transferred to other public insurance programs at the time of health plan exit from SCHIP were excluded.

Existing literature demonstrates that those disenrolling from public insurance programs mostly remain uninsured and face the possibility of deterioration in their access to and receipt of appropriate health care. However, as our results show, the impact of plan exit on disenrollment in a public insurance program may diminish if children have the option of transferring to other public insurance programs in the state. The transfer to other public insurance programs may be easier in states where programs are structured as parts of an umbrella institution with coordinated administration of these programs. In general, coordinated administration of Medicaid and SCHIP programs have been found as one of the factors that help improve retention in public insurance programs (Sommers 2005).

Our study results are coming from a limited number of health plan exits. As a result, it is not possible to derive definite policy implications. However, our findings do suggest that disenrollment due to health plan exit may diminish significantly in states that have a coordinated structure in place for the administration of their public insurance programs.

A second limitation of our study is that we did not have a large sample of CSHCN, i.e., those with chronic conditions, in our database in the health plans exiting the SCHIP program to conduct an additional subgroup analysis for them. Any disenrollment of CSHCN due to health plan exit would be of special concern given the importance of continuity of care for this group.

Third, we were unable to examine if disenrollment gap varied across different racial/ ethnic groups. Reporting of race/ethnicity is not mandatory for SCHIP populations. As a result, our SCHIP enrollment files do not have complete information on the race/ethnicity of beneficiaries.

## VI. List of Products

The results from this project to date include an *oral presentation*

- Aydede, Sema K., Joseph V. Terza, David Sappington, W. Bruce Vogel, Mujde Z. Erten, and Elizabeth Shenkman. “Health Plan Exits and Disenrollment in State Children’s Health Insurance Programs” Academy Health’s Annual Research Meeting, Washington, June 2008;

*a manuscript preparation*

- Aydede, Sema K., Joseph V. Terza, David Sappington, W. Bruce Vogel, Mujde Z. Erten, and Elizabeth Shenkman. “Health Plan Exits and Disenrollment in the State Children’s Health Insurance Programs”; and

*attainment of PhD candidacy for research assistant* on this project (Mujde Z. Erten) on March 23, 2009 through her work with *Professor Terza* (Investigator on this project) building on Professor Terza’s earlier work on estimation techniques for non-random observational data coupled with estimation techniques required for this study.

Currently, we are continuing technical and empirical work related to the impact health plan exits have on health care expenditures (including overall, inpatient, outpatient and emergency department) and quality of care.

## References

Burstein HR, Swartz K, et al. 1999. The Effect of Change of Health Insurance on Access to Care. *Inquiry*. 35:389-397.

Christakis DA, Feudtner C, Pihoker C, Connell FA. 2001. Continuity and Quality of Care for Children with Diabetes who are Covered by Medicaid. *Ambulatory Pediatrics*. 1(2):99-103.

Cunningham PJ, Kohn L. 2000. Health Plan Switching: Choice or Circumstance? *Health Affairs*. 19(3):158-164.

Cunningham PJ, Trude S. 2001. Does Managed Care Enable More Low Income Persons to Identify a Usual Source of Care? *Medical Care*. 39(7):716-726.

Dick AW, Allison RA, Haber SG, Brach C, Shenkman E. 2002. Consequences of States’ Policies for SCHIP Disenrollment. *Health Care Financing Review*. 23(3):65-88.

Fairbrother G, Park HL, Haivderv A. 2004. *Policies and Practices that Lead to Short Tenures in Medicaid Managed Care*. Center for Health Care Strategies.

Felt-Lisk S, Dodge R, McHugh M. 2001. *Trends in Health Plans Serving Medicaid: 2000 Data Update*. Kaiser Commission on Medicaid and the Uninsured.

Federico SG, Steiner JF, Beaty B, et al. 2007. Disruptions in Insurance Coverage: Patterns and Relationship to Health Care Access, Unmet Need, and Utilization Before Enrollment in the State Children's Health Insurance Program. *Pediatrics* 120(4):e1009-e1016.

Flocke SA, Stange KC, Zyzanski SJ. 1998. The Association of Attributes of Primary Care with the Delivery of Clinical Preventive Services. *Medical Care*. 36(8supp):AS21-AS30.

Frank RG, Dewa CS, et al. 1995. The Demand for Childhood Immunizations: Results from the Baltimore Immunization Study. *Inquiry*. 32(2):164-173.

Franks P, Cameron C, Bertakis KD. 2003. On Being New to an Insurance Plan: Health Care Use Associated with the First Years in a Health Insurance Plan. *Annals of Family Medicine*. 1(3):156-161.

Gill JM, Mainous AG III. 1998. The Role of Provider Continuity in Preventing Hospitalizations. *Achieves of Family Medicine*. 7:352-357.

Hall MA, Dugan E, Zheng B, Mishra AK. 2001. Trust in Physicians and Medical Institutions: What is it, Can it be Measured, Does it Matter? *The Milbank Quarterly*. 79(4):613-639.

Hurley R, McCue M, McCall N. 2000. *Participation, Performance, and Perspectives in Medicaid and Medi-Cal Managed Care*. Center for Health Care Strategies.

Kenney G. 2007. The Impacts of the State Children's Health Insurance program on Children Who Enroll: Findings from Ten States. *Health Services Research* 42(4):1520-1543.

Long SK, Yemane A. 2005. Commercial Plans in Medicaid Managed Care: Understanding Who Stays and Who Leaves. *Health Affairs*. 24(4):1084-1094.

Maternal and Child Health Bureau. 1995. *Definition of Children with Special Health Care Needs*. Division of Services for Children with Special Health Care Needs. Rockville, MD.

Maeseneer JM, Prins L, Gosset C, Heyerick J. 2003. Provider Continuity in Family Medicine: Does It Make a Difference for Total Health Care Costs? *Annals of Family Medicine*. 1(3):144-148.

McCue MJ, McCall N, Hurley RE et al. 2001. Financial Performance and Participation in Medicaid and Medi-Cal Managed Care. *Health Care Financing Review*. 23(2):69-81.

Miller JE, Gaboda D, Cantor JC, Videon TM Diaz Y. 2004. Demographics of Disenrollment from SCHIP: Evidence from NJ KidCare. *Journal of Health Care for the Poor and Underserved*. 15:113-126.

- Neff JM, Sharp V, Muldoon J, Graham J, Popalisky J, Gay J. 2001. Identifying and Classifying Children with Chronic Conditions Using Administrative Data with the Clinical Risk Group Classification System. *Journal of Ambulatory Pediatrics*. 2(1): 72-79.
- Newacheck PW, Stoddard JJ, Hughes DC, et al. 1998. Health Insurance and Access to Primary Care for Children. *New England Journal of Medicine* 338(8):513-519.
- Olson LM, Tang SF, Newacheck PW. 2005. Children in the United States with Discontinuous Health Insurance Coverage. *New England Journal of Medicine* 353(4):282-391.
- O'Malley AS, Mandelblatt J et al. 1997. Continuity of Care and the Use of Breast and Cervical Cancer Screening Services in a Multiethnic Community. *Archives of Internal Medicine*. 157(13):1462-1470.
- O'Malley AS, Sheppard VB, Schwartz M, Mandelblatt J. 2004. The Role of Thrust in Use of Preventive Services among Low-Income African-American Women. *Preventive Medicine*. 38:777-785.
- Phillips JA, Miller JE, Cantor JC, Gaboda D. 2004. Context or Composition: What Explains Variation in SCHIP Disenrollment? *Health Services Research*. 39(4 Pt 1):865-885.
- Roohan PJ, Conroy MB, et al. 2000. Commercial Managed Care Plans Leaving the Medicaid Managed Care Program in New York State: Impact on Quality and Access. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. 77(4):560-572.
- Shea S, Ehrlich MH, Field L, Francis CK. 1992. Predisposing Factors for Severe, Uncontrolled Hypertension in an Inner-City Minority Population. *The New England Journal of Medicine*. 327:776-781.
- Shenkman E, Vogel B, Boyett JM, Naff R. 2002. Disenrollment and Re-Enrollment Patterns in a SCHIP. *Health Care Financing Review*. 23(3):47-63.
- Smith MA, Bartell JM. 2004. Changes in Usual Source of Care and Perceptions of Health Care Access, Quality, and Use. *Medical Care*. 42(10):975-984.
- Smith PJ, Stevenson J, Chu SY. 2006. Association between Childhood Vaccination Coverage, Insurance Type, and Breaks in Health Insurance Coverage. *Pediatrics* 117(6):1972-1978.
- Sommers BD. 2005. The Impact of Program Structure on Children's Disenrollment from Medicaid and SCHIP. *Health Affairs*. 24(6):1611-1618.
- Starfield B. 1998. *Primary Care: Balancing Health Needs, Services, and Technology*. New York, New York: Oxford University Press.

Szilagyi P, Dick AW, Klein JD, et al. 2004. Improved Access and Quality of Care after Enrollment in the New York State Children's Health Insurance Program (SCHIP). *Pediatrics* 113(5):e395-e404.

Terza JV. 2008a. Parametric Regression and Health Policy Analysis: Estimation and Inference in the Presence of Endogeneity. Working Paper, University of Florida.

Terza JV. 2008b. Parametric Nonlinear Regression with Endogenous Switching. *Econometric Reviews*, in press.

Thompson JW, Ryan KW, Pinidiya SD, Bost JE. 2003. Quality of Care for Children in Commercial and Medicaid Managed Care. *JAMA*. 290(11):1486-1493.

Weber EJ, Showstack JA, et al. 2005. Does Lack of Usual Source of Care or Health Insurance Increase the Likelihood of an Emergency Department Visits? Results of a National Population-Based Study. *Annals of Emergency Medicine*. 45(1):4-12.

Weiss LJ, Blustein J. 1996. Faithful Patients: The Effect of Long-Term Physician-Patient Relationships on the Costs and Use of Health Care by Older Americans. *American Journal of Public Health*. 86(12):1742-1747.

Xu KT. 2002. Usual Source of Care in Preventive Service Use: A Regular Doctor versus a Regular Site. *Health Services Research*. 37(6):1509-1529.