"Hoosier Healthwise" to reduce the stigma cost of participation. In addition, states reduced both the financial burden and non-financial burden of applying for Medicaid. Efforts included dropping asset tests, presumptive eligibility, self-declaration of income, and continuous eligibility. Some choices – such as imposing premiums on CHIP or waiting periods – raised the cost of participating, however.[13]

If the efforts described above at both the national and state level leads one to believe that transaction costs (*C*) are relatively low (or BEN_{MMC} is fairly high even if $BEN_{FFS} - BEN_{MMC}$ is high too) one again must confront the puzzle of non-participation. Cutler and Gruber (1996a) suggest that this is consistent with the concept of conditional coverage. Unlike other transfers (such as cash welfare, food stamps or public housing), the value from Medicaid insurance is very high when one is sick and fairly low when one is healthy. Since children are typically in good health, it may take the onset of an illness to get parents to enroll them, and then when a child's returns to good health, such parents may allow Medicaid coverage to lapse. Cutler and Gruber's conditional coverage hypothesis would suggest the process repeats itself the next time the child gets sick.

5. Data Description

In order to examine the impact of managed care on insurance coverage of children (Medicaid, private coverage, and uninsurance), we rely on the March Current Population Survey (CPS) Annual Social and Economic Survey (ASEC) (U.S. Department of Commerce, 2004). For most of the analysis, we use the March 1996-2004 CPS; because health insurance coverage is reported for the previous calendar year, this covers 1995-2003.[14] In some specifications, we also use data going back to 1992.The CPS health

[13] The Children's Health Insurance Program (CHIP) provides public health insurance coverage for near poor, uninsured children whose families have income above Medicaid limits. For literature on CHIP premiums in Kentucky and other states, as well as other policies that raise the cost of participating, see: Kenney et al. (2006), Marton (2007), Marton and Talbert (2010), Marton, Ketsche, and Zhou (2010), and Wolfe and Scrivner (2005).
[14] The survey questions refer to health insurance coverage during the prior calendar year, but Swartz (1986) concludes that many responses in fact reflect coverage at the time of the interview.

insurance questionnaire was quite uniform during the period that is analyzed.[15] By using all of these years, we are able to exploit the fact that managed care in the Louisville and Lexington regions was phased-in and then phased-out in the Lexington region.

The CPS is recognized as a credible and widely respected survey. During the period in question, it was the largest survey that included health insurance coverage at the individual level and geographic identifiers (at the state and local levels). Consequently, it has been used in many academic studies examining the effects of health insurance policies across states, yet has rarely been used to study policies across localities within state.[16] It is administered by the Bureau of the Census for the Bureau of Labor Statistics, has been conducted for more than 50 years, and surveys approximately 50,000 households. The response rate for the March survey is exceptionally high for a voluntary, household-based survey.[17] The sample is scientifically selected to represent the civilian non-institutional population.

The survey asks health insurance status for all household members; it includes questions about employer-provided health insurance, private health insurance, and government insurance. The CPS does not directly ask people whether they are uninsured, rather it asks about specific types of insurance and

[15] The CPS was redesigned in March 1995 (Swartz, 1997). The questions were reordered, and additional questions were added to pick up state-specific means-tested health plans. Gilmer and Kronick (2009) note that the 1995 changes mainly affected coverage estimates for CHAMPUS and dependent coverage. All of our main results are from after the redesign. In addition, the CPS added a verification question for health insurance in 2000; see http://beta.census.gov/content/dam/Census/library/working-papers/2001/demo/cps-asec-health-insurance-verification-question.pdf (Nelson and Mills, 2001) (accessed 5/15/2014).

[16] For inter-state studies, see Buchmueller and DiNardo (2002), Aizer and Grogger (2003), Lo Sasso and Buchmueller (2004), Simon (2005), and Baicker and Chandra (2006).

[17] The CPS has a large percentage of in-person interviews, which improves coverage and reliability and leads to a very high response rate. Interviewers use laptop computers to administer the interviews, asking questions as they appear on the screen and directly entering the responses obtained. Households are interviewed eight times over the course of sixteen months. During the first and the fifth interviews, an interviewer usually visits the sample unit. Almost all of the remaining interviews are conducted by telephone. Even though the CPS is a voluntary survey, the March interview of recent years has between 92 and 93 percent of the eligible households providing basic labor force information and between 80 and 82 percent of the eligible households completing the Annual Social and Economic Survey supplement. See https://web.archive.org/web/20110603074109/http://www.bls.census.gov/cps/ads/1995/sdacodes.htm , https://web.archive.org/web/20110603074115/http://www.bls.census.gov/cps/ads/1995/smethovr.htm , and https://web.archive.org/web/20100527175813/http://www.bls.census.gov/cps/ads/2002/S&A_02.pdf for additional discussion (accessed 5/15/ 2014).

respondents who answer "no" to all of the categories are considered uninsured. It asks respondents about coverage at any time during the preceding calendar year, so being uninsured reflects a lack of health insurance throughout the entire previous calendar year. In the analysis that follows, we use health insurance definitions identical to those of the Census Bureau.[18]

We initially extracted 18,411 Kentucky respondents from the March 1996 to 2004 CPS. In our empirical results, we restrict attention to the 28 percent of respondents (5,153 respondents) that were under the age of 18. Approximately 43 percent of these respondents lived in the Louisville, Lexington or Cincinnati metropolitan areas and the remainder lived in unidentified areas. More than 36 percent of these respondents had some form of imputed information on health insurance; as a result, we estimate all specifications excluding imputed values.[19]

Over the entire 1995 to 2003 time period among children under 18, roughly 28 percent participated in Medicaid, 54 percent had private insurance, and 15 percent were uninsured. Medicaid coverage among children fell from 27-28 percent in 1996-1997, to 21-24 percent in 1998-2000, and then increased to 30-35 percent in 2001-2003. Figures 2A and 2B break out the insurance trends separately for low-income (under 300 percent FPL) and high-income (over 300 percent FPL) children, where trends for Medicaid, private coverage and uninsurance are measured relative to the 1995 baseline. For the low-income sample, there is a strong negative correlation between Medicaid changes and uninsurance changes. This would be expected if, when Medicaid becomes less appealing (as with MMC), families drop their enrollment and become conditionally covered. In contrast, for the high-income sample, gains

[18] To be more specific, the CPS explicitly asks about private insurance coverage, employer-based coverage, employer-based coverage in one's own name, direct privately purchased insurance, Medicare, Medicaid, and CHAMPUS. It defines "uninsured" as not being in any of the other categories. The health insurance definitions can be found at: https://web.archive.org/web/20041211163829/http://www.census.gov/hhes/hlthins/hlthinsvar.html (accessed 5/15/2014).

[19] Bollinger and Hirsch (2006) find that in the context of earnings in the CPS, coefficient bias due to the imperfect imputation is widespread and often severe. They suggest that a simple alternative is to exclude imputations, and base estimates on a respondent-only sample.

in Medicaid coverage do not translate into reductions in uninsurance.[20] For the low-income sample, Medicaid coverage increased until 1997, then dipped in 1998-2000, and then started to increase again. For the high-income sample, no obvious patterns are present. Although the patterns for the full sample or low-income sample are certainly consistent with the implementation and repeal of managed care affecting Medicaid participation, other factors clearly matter as well. Kentucky – like the rest of the United States – was experiencing substantial economic growth in the late 1990s until the 2001 recession. The unemployment rate in Kentucky fell from 5.1 percent in 1996 to 4.1 percent in 2000, but increased to 5.6 percent by 2002.[21]

Table 2 provides summary statistics. Across the full sample, almost 90 percent of children are white, and virtually all remaining children are African-American. Nearly 25 percent of children live in poverty and another 25 percent live in near-poverty. Approximately 20 percent live in the Louisville MSA and another 12 percent live in the Lexington MSA; thus, a substantial fraction of the sample was subject to the managed care mandate after 1997. Table 2 shows clear differences across the three metro areas in Kentucky, as well as the remainder of the state. Northern Kentucky (which includes the Cincinnati metro area) is relatively affluent, while the "rest of Kentucky" (which includes Appalachia) is far poorer. Both major urban areas in Kentucky – Louisville and Lexington – have far greater minority concentration than the rest of the state. The columns in this table illustrate that there are certainly fixed characteristics that vary by region that in turn may affect health insurance choices. All empirical specifications will therefore include fixed effects for the Louisville, Lexington and Northern Kentucky regions (with the rest of Kentucky omitted).

6. Empirical Set-Up

[20] In fact, the correlation is positive: $\rho = +0.35$. For low-income children, $\rho = -0.58$.
[21] For more detail, see the following BLS website: http://www.bls.gov/schedule/archives/all_nr.htm#SRGUNE (accessed 5/15/2014).

We rely on the CPS to examine health insurance coverage and focus on repeated cross-sections of children under age 18 from Kentucky. We follow Currie and Fahr (2005) and estimate linear probability models. The specification is:

$$INS_{ijt} = \beta_0 + \beta_1 MMC_{ijt} + \beta_2 X_i + \delta_j + \delta_t + \varepsilon_{ijt} \quad (1)$$

where INS_{ijt} represents insurance coverage (either Medicaid coverage, private coverage, or no coverage) for person *i* in MSA *j* (Louisville, Lexington, or Northern Kentucky/Cincinnati, with the rest of the state as the omitted group) in time period *t* (1995-2003), and is a dummy variable equal to 1 if the child had that coverage at any time during the previous calendar year. We also include a number of individual controls in X_i related to the child or the child's family (age, gender, race and family income category).[22]

The variable MMC_{ijt} is the full-year Medicaid Managed Care penetration rate and varies only by MSA and time period.[23] It represents the fraction of the population in MSA *j* that would be covered by MMC. It also incorporates the fact the "rest of the state" category includes several counties covered under the Louisville-centered or Lexington-centered managed care plan. The penetration rate accounts for the partial year phase-in of MMC in 1997 and the partial year phase-out in 2000 (in Lexington).

Table 3 illustrates the values for MMC_{ijt} used in our analysis, for each of the four regions. The Passport program was implemented in Louisville in late 1997; thus the population was covered for 2/12ths of that year, and then for the full year thereafter.[24] Similarly, KHS was implemented in Lexington

[22] We have also estimated all our models for children including additional controls, such as housing tenure, family size, family type, and educational attainment of the household head/spouse. All conclusions for MMC – both with respect to magnitude and significance – are unchanged with these additional controls.

[23] The managed care variable is measured at the group level (region and time), while the data is at the individual level. We correct the standard errors for non-nested two-way clustering using the methods of Cameron, Gelbach and Miller (2011).

[24] The three counties that comprise the Louisville MSA are Bullitt County, Jefferson County, and Oldham County. Approximately 70 percent region 3's population is contained within the Louisville MSA.

in late 1997, but was phased-out in the middle of 2000.[25] Thus, the full-year managed care penetration rate falls back to zero from 2001 onward. Managed care was never available in Northern Kentucky; thus, children in that region are always assigned a value of zero.[26] Finally, the "rest of Kentucky" includes 104 of the 120 counties in Kentucky. Of these 104 counties, 13 of them are relatively close to Louisville and participated in Passport. Another 14 counties are close to Lexington and participated in KHS. The remaining 77 counties did not participate in MMC. The values in the final column of Table 3 reflect the penetration rate for the 104 counties; it incorporates the phase-in of managed care in November 1997 for the 27 counties near Louisville and Lexington, the phase-out of managed care in July 2000 for the 14 counties near Lexington, and the fact that the population in the remaining counties was never covered by managed care.

By the construction of the managed care penetration rate, the coefficient β_1 measures the marginal impact on insurance coverage from switching to MMC for a full year. Our specification includes fixed effects for time and region (δ_t and δ_j). Time fixed effects account for time-varying statewide economic conditions or statewide changes in transfer programs. Currie and Fahr (2005) note that changing income cutoffs can confound the effect of MMC. Region fixed effects account for time-invariant regional differences, such as the underlying differences in the population in Appalachia. With these fixed effects included, the coefficient β_1 can be interpreted as the difference-in-differences estimator and identification comes from the region-time interaction.

A key assumption in the above model, however, is that a child's region is exogenous. One threat to identification comes from the possibility that families systematically move across regions in Kentucky in response Medicaid policy. In the broader literature on welfare benefits, Gelbach (2004) convincingly

[25] The seven counties that comprise the Lexington MSA are Bourbon County, Clark County, Fayette County, Jessamine County, Madison County, Scott County, and Woodford County. Approximately 65 percent of region 5's population is contained within the Lexington MSA.

[26] The six counties that comprise the Northern Kentucky/Cincinnati MSA are Boone County, Campbell County, Gallatin County, Grant County, Kenton County and Pendleton County. All counties in this MSA were part of Region 6, and were never subject to Medicaid managed care during this period.

finds that among women likely to use cash welfare, movers move to higher-benefit states, and do so earlier in the life cycle. In the context of health insurance, however, Schwartz and Sommers (2014) find that expanding Medicaid did not affect state-to-state moves. Despite these mixed findings on migration, if one believes that state-to-state moves occur due to differences in cash welfare generosity, then within-state moves (which are clearly less costly for families) due to differences in Medicaid plan generosity may be an important issue. The moving cost may be especially low in Kentucky, which has 120 counties all of which are fairly small with respect to land area.[27] With longitudinal data, a number of studies have used the family's initial county of residence prior to changes in Medicaid policy as an instrument for the actual policy (Aizer et al. 2007; Marton et al. 2014). These studies tend to find that accounting for migration has little impact on the parameter estimates.

Because our CPS data is a series of repeated cross-sections, we cannot employ the approach of Aizer et al. (2007) or Marton et al. (2014). Instead, we examine data from the 2000 Census Public-Use Microdata Sample (PUMS).[28] We use the 5 percent sample and directly explore migration patterns within Kentucky for 30,127 children aged 5-17 in 2000, who resided in Kentucky in both 1995 and 2000.[29] The timespan between 1995 and 2000 is very informative for our purposes, because it encompasses the shift to MMC. For the children in this sample, mobility is fairly high: 42 percent of children changed residences at some point during the 5-year-period. We observe Public Use Microdata Areas (PUMAs) both in 1995 and 2000 for 25 geographic areas within Kentucky. We assign each PUMA to region 3 (Louisville), region 5 (Lexington), or the rest of the state.

[27] The original motivation for having so many counties was to ensure that residents in the days of poor roads and horseback travel could make a round trip from their home to the county seat and back in a single day, as well as being able to travel from one county seat to the next in the same fashion. See Kleber, John E., ed. (1992). "Counties". The Kentucky Encyclopedia. Associate editors: Thomas D. Clark, Lowell H. Harrison, and James C. Klotter. Lexington, Kentucky: The University Press of Kentucky. ISBN 0-8131-1772-0. The 120 counties range in area from 99 square miles (Gallatin County) to 788 square miles (Pike County). See http://en.wikipedia.org/wiki/List_of_counties_in_Kentucky (accessed 5/15/2014).

[28] See http://www.census.gov/census2000/PUMS5.html and https://www.census.gov/prod/cen2000/doc/pums.pdf (accessed 5/15/2014).

[29] All estimates use Census weights.

The first panel of Appendix Table 1 shows mobility matrices from 1995 to 2000 across regions within Kentucky for the full sample. Of children initially in a Passport or KHS region, approximately 1.01 (= 0.45 + 0.56) percent moved to a FFS region between 1995 and 2000. Of children initially in other regions, approximately 1.11 (= 0.50 + 0.61) percent moved to a managed care region. Hence, net migration across regions is essentially zero. One concern with this first panel, however, is that by definition, the diagonal includes non-movers. When we examine the 42 percent of children who moved in the second panel, the conclusions are essentially unchanged. Around 2.7 percent of children in a FFS region who moved ended up in a MMC region, and around 2.4 percent of children in a MMC region who moved ended up in a FFS region.

The final two panels in this table examine low-income and high-income children who moved during the five-year period. Migration induced by transfer programs (either cash welfare or health insurance) would likely affect the low-income, but not high-income group. Among low-income children, 2.86 percent moved from a FFS to MMC region and 2.45 percent moved from MMC to FFS. Among high-income children, these numbers are 2.1 percent and 2.35 percent respectively. The fact that interregional moves are nearly identical for these groups and that the migration flows are relatively balanced suggests that endogenous migration is not a substantive issue.

7. Results

Our analysis starts by examining 3,286 children in Kentucky from 1995 to 2003 in Table 4. Column (1) shows that implementing MMC reduces Medicaid participation by roughly 10 percentage points. There is a virtually identical increase in the uninsured rate and no change in private insurance coverage. When combined, these results suggest that, holding other factors constant, MMC is less valuable than FFS. When there are transaction costs for continuing on Medicaid (such as the hassle of recertification) and essentially no barrier in reenrolling at the time a child gets sick, the pattern of results

would suggest a confirmation of Cutler and Gruber's (1996a) conditional coverage hypothesis. The results are substantively large; the baseline Medicaid coverage rate for the full sample over 1995-2003 was 28 percent, meaning that MMC reduces participation on the extensive margin by approximately roughly 35 percent. The baseline uninsured rate is 15 percent, meaning that MMC increases it by nearly 75 percent. The evidence presented here for churning off Medicaid is consistent with other analyses of Kentucky's Medicaid program; Marton (2007) finds that relatively small $20 family premiums for CHIP induce substantial exits from the program.

Medicaid – like other transfer programs – targets low-income groups. Thus, a key prediction is that the impact of MMC should be concentrated among low-income children but not high-income children. Columns (2) and (3) break children out into these two groups, and following the logic of Currie and Fahr (2005), we divide the sample where family income exceeds 300 percent of the FPL. Although the formal income cut-off for Kentucky's CHIP program is only 200 percent of the FPL, it is based on monthly income, while income is measured on an annual basis in the CPS. Thus, in families with volatile income, some children might qualify and report Medicaid coverage even though their annual income is above the CHIP income cutoff. Stratifying at 300 percent of the FPL leaves two-thirds of children under this cut-off, and likely means that even with substantial income volatility, we are correctly classifying children ineligible for Medicaid. The results for low-income children in Column (2) suggest a highly significant reduction – 16 percentage points – in Medicaid participation from MMC and a corresponding one-for-one rise in the uninsured rate. For high-income children, the results are both insignificant and much smaller in magnitude.

In the next two columns, we explore how health status interacts with MMC. During the 1995-2003 period, the CPS asked respondents to self-report their health into five categories: excellent, very good, good, fair, and poor. Children are overwhelming reported to be in excellent health, so we divide the sample roughly in half by comparing those in excellent health to all other health categories. For

those in excellent health, the implicit value of Medicaid health insurance is relatively low, and the change in value from switching from the more generous FFS to the less generous MMC is low, too. Since the change in value from moving to MMC is low, we expect relatively little churning for children in excellent health. In contrast, the change in value is higher for children in worse health and we therefore expect more movement from Medicaid to uninsurance. The results in Columns (4) and (5) confirm this behavior. For both children in excellent and worse health, there are one-for-one decreases in Medicaid participation and increases in uninsurance. The magnitude is approximately three times larger for those in worse health, consistent with the idea that there was a larger change in the value of Medicaid.

In the final three columns, as well as Appendix Table 2, we explore various issues related to the robustness of the results. We first note that the variation in MMC comes at the region-year level. We control for both region and year effects, meaning the identifying variation comes from the interaction of the two. There is still a concern about omitted variables that vary within a region over time, however. An obvious concern would be the business cycle: economic conditions may change differentially in Louisville relative to Lexington, or relative to Appalachia. To directly address this concern, we explicitly include the unemployment rate – which is readily available from the BLS – for each region and year, aggregated from the counties within those regions. The results in Column (6) suggest that omitted region-year factors do not materially affect our conclusions. The coefficient estimates are quite similar to the original estimates in Column (1). Although the estimates are somewhat less precise, both the decline in Medicaid participation and the rise in uninsurance remain statistically significant.

Another concern is that pre-existing trends for health insurance within regions might be correlated with the implementation of MMC, falsely leading to the conclusion that MMC reduced Medicaid participation. To address this, we form a "placebo test" by now calling the 1995-1997 period the "after" period, and the period from 1992-1993 as the "before" period.[30] We assign to each region

[30] The year 1994 was excluded because of lack of information on imputed values.

and year the managed care penetration rate from three years later (i.e., 1995 is assigned 1998's value shown in Table 2). In all cases, the results are insignificant; for uninsurance for example, the placebo passage of MMC insignificantly lowered uninsurance rates by roughly 2 percentage points (Column 7) rather than raising it by 11 percentage points (Column 1).

Next, we return to the 1995-2003 sample and provide another placebo test by examining 3,614 adult men. The Medicaid program during this period was highly targeted to several groups, such as low-income children, pregnant women and participants in AFDC/TANF or SSI. Adult men typically do not fall into these categories, and Medicaid participation for them is exceedingly low. Nonetheless, if MMC simply proxies for some omitted region-time factor, one might expect similar changes in private coverage or uninsurance for this group. In the final column, the effect private coverage is insignificant and opposite signed to the initial specification for children in Column (1). For uninsurance, there is virtually no change due to MMC – the "effect" is less than one percentage point and insignificant. This stands in stark contrast to the findings in the main specification. Finally, we explore the construction of the MMC variable in Appendix Table 2. One may be concerned with measurement error, especially for the 104 counties that form a hybrid of region 3, 5 and the rest of Kentucky. We re-estimate the models, restricting to region-year cells where MMC equals 0 or 1 (see Table 3). Although we have smaller samples, our findings are very similar to those in Table 4.

In summary, our main specification and robustness checks point to a consistent story – MMC lowers the value of participating in Medicaid, and families respond by leaving Medicaid and becoming uninsured. The ease of getting back on Medicaid (if needed) is consistent with the notion of conditional coverage and would explain the transition from Medicaid to being uninsured.

8. Conclusions

In this study, we have examined implementation of MMC in Kentucky on the insurance coverage choices of children. We argue that switching from FFS to MMC implicitly lowers the value of the

Medicaid, and should therefore lead to substitution away from Medicaid and toward either private coverage or uninsurance. We find essentially one-for-one substitution away from Medicaid and towards uninsurance. Increasing the managed care penetration rate from 0 percent to 100 percent lowers Medicaid participation (and raises uninsurance) by approximately 10 percentage points, a result that is statistically significant, robust to sensible changes in the empirical specification, and substantively important. We find no evidence of substitution to private plans.

Prior work, such as Currie and Fahr (2005), has also found evidence that MMC has reduced Medicaid participation, but with small overall magnitudes and effects that are restricted to important sub-groups (such as African Americans and young children). We suspect that the implementation of MMC in Kentucky – which was abrupt, far-reaching, and mandatory – likely led to a larger decline in Medicaid's value (and thus, a larger decline in participation) compared to their empirical approach which relies on HCFA classifications of MMC across all states. Our approach, for example, classifies Kentucky regions as "managed care" only after they have a comprehensive set of reforms relating to provider reimbursement, consumer choice, and administrative responsibilities (Marton et al. 2014), whereas HCFA classifies Kentuckians as in managed care once it adopted a gatekeeper model with primary care case management (KENPAC) several years prior to the comprehensive reform, even though the delivery system was still FFS.

Although we argue that the benefits from Medicaid changed due to the switch from FFS to MMC, it is more difficult to argue that the costs of participating changed much or were particularly high to begin with. Importantly, it is difficult to believe that transaction costs increased due to the shift to MMC. For example, there is no evidence that Kentucky's Medicaid program became more stigmatizing or that the enrollment barriers became more difficult after 1997. Rather, the observed behavior in our data is consistent with low transaction costs – in a sense, children are conditionally covered by Medicaid. Unlike other transfer programs that confer a relatively high benefit flow each period, the

value from Medicaid is largely derived when children are sick. Families can cycle children on and off Medicaid when the child's health changes, in contrast to private market coverage which, at the time, had pre-existing condition clauses and benefit carve-outs. Such an explanation would also be consistent with substantively large effects, since families are not forgoing a valuable benefit for the children, but rather procrastinating in signing up for that benefit. The conditional coverage explanation would also be consistent with a lack of flow from Medicaid to private plans since bouncing out of Medicaid into a private plan likely entails a monthly premium cost to the consumer.

To the extent that conditional coverage explains the shift from Medicaid to being uninsured, our findings speak more generally to some important provisions in the ACA. As Feldstein (2013) highlights, the ACA's combination of guaranteed issue, community rating, open enrollment periods and modest financial penalties might "*encourage those who are not ill to become or remain uninsured until they have a potentially costly medical diagnosis*." In our study, Kentucky's Medicaid program was always open enrollment (a child could immediately enroll if they were eligible), guaranteed issue (sick children could enroll), community rated (at an extremely low premium, if any), and had no financial penalties for non-participation. Thus, our results suggest that Feldstein's concern of unravelling could be a major issue in the future.

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Figure 1 – MMC Penetration

January 1995-October 1997 – All 120 Counties under FFS.

November 1997-June 2000 – 37 Counties under MMC, 83 under FFS.

July 2000-December 2003 – 16 Counties under MMC, 104 under FFS

Figure 2A

Overall trends in health insurance coverage for low-income sample

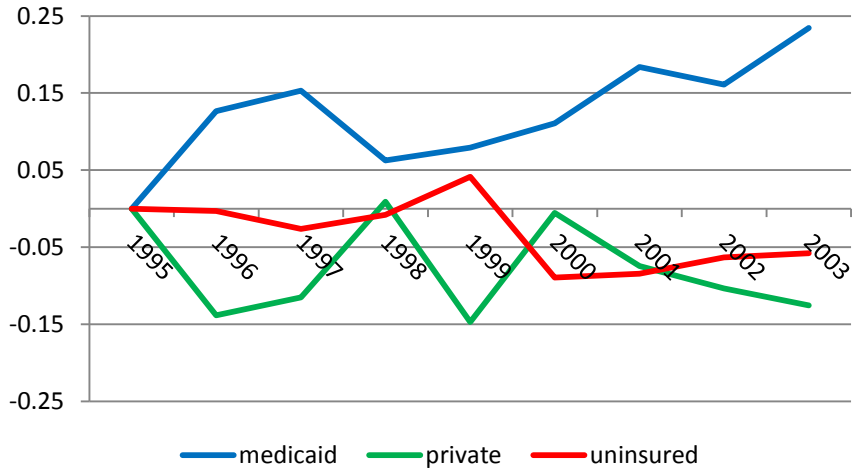

Figure 2B

Overall trends in health insurance coverage for high-income sample

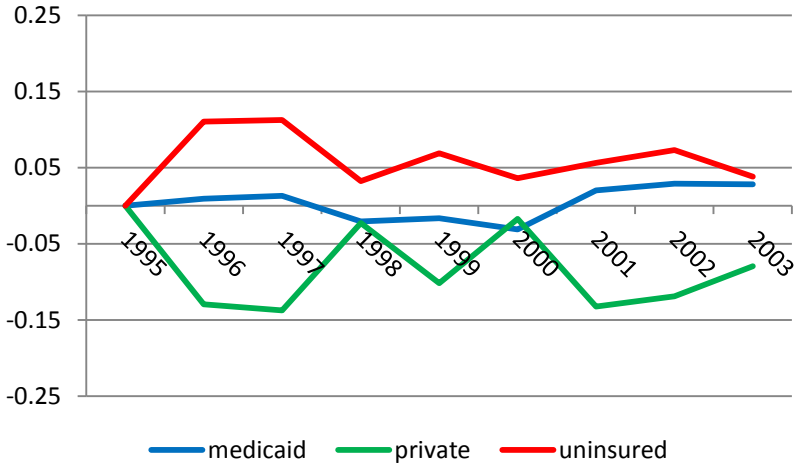

Table 1
Trends in Kentucky Population and Medicaid Enrollment (in thousands)

Year	Statewide Population	Regions 3 + 5 Population	Statewide Medicaid Enrollment	Statewide Medicaid Managed Care	Statewide Medicaid FFS
1997	3,953	1,812	532	0	532
1998	3,985	1,832	521	181	340
1999	4,018	1,856	518	177	341
2000	4,049	1,935	557	114	443
2001	4,066	1,933	608	126	482
2002	4,087	1,929	627	131	496

Notes: Population estimates are from the Kentucky State Data Center (http://ksdc.louisville.edu/ , accessed 5/15/2014) and the Medicaid eligible estimates are from the Kentucky Cabinet for Health and Family Services (http://chfs.ky.gov/dms/stats.htm , accessed 5/15/2014).

Table 2
Summary Statistics from CPS

	Louisville Region (Region 3)	Lexington Region (Region 5)	Northern Kentucky Region (Region 6)	Rest of Kentucky
Medicaid	0.24	0.20	0.11	0.33
	(0.02)	(0.02)	(0.02)	(0.01)
Private	0.66	0.59	0.77	0.45
	(0.02)	(0.03)	(0.02)	(0.01)
Uninsured	0.10	0.20	0.13	0.16
	(0.01)	(0.02)	(0.02)	(0.01)
Age	8.3	7.7	8.4	8.9
	(0.19)	(0.26)	(0.31)	(0.12)
Female	0.50	0.49	0.48	0.50
	(0.02)	(0.03)	(0.03)	(0.01)
White	0.74	0.84	0.97	0.93
	(0.02)	(0.02)	(0.01)	(0.01)
Black	0.23	0.12	0.02	0.05
	(0.02)	(0.02)	(0.01)	(0.01)
Other	0.03	0.04	0.01	0.02
	(0.01)	(0.01)	(0.01)	(0.00)
0-100% FPL	0.22	0.26	0.13	0.27
	(0.02)	(0.02)	(0.02)	(0.01)
100-200% FPL	0.15	0.22	0.12	0.30
	(0.01)	(0.02)	(0.02)	(0.01)
200-300% FPL	0.16	0.22	0.23	0.18
	(0.01)	(0.02)	(0.02)	(0.01)
>300% FPL	0.46	0.30	0.52	0.24
	(0.02)	(0.02)	(0.03)	(0.01)
Sample Size	659	387	293	1,947

Notes: Standard errors in parentheses. Sample includes children from the 1995-2003 CPS aged 0-17, excluding children with imputed values for health insurance or full supplement imputation flags.

Table 3
Full-Year Medicaid Managed Care Pentration Rate

	Louisville Region (Region 3)	Lexington Region (Region 5)	Northern Kentucky Region (Region 6)	Rest of Kentucky
1995	0.00	0.00	0.00	0.00
1996	0.00	0.00	0.00	0.00
1997	0.17	0.17	0.00	0.04
1998	1.00	1.00	0.00	0.26
1999	1.00	1.00	0.00	0.26
2000	1.00	0.50	0.00	0.20
2001	1.00	0.00	0.00	0.14
2002	1.00	0.00	0.00	0.14
2003	1.00	0.00	0.00	0.14

Notes: Each penetration rate is weighted by the fraction of population in the CPS MSA that would be covered under MMC. When MMC was implemented part-way through the year, the penetration rate was adjusted accordingly. The Full Year Medicaid Managed Care Penetration Rate is the percentage of children who would be eligible for MMC (based solely on region and year; MMC varies because unidentified MSAs in the CPS include both managed care and non-managed care counties and because MMC was phased-in/eliminated part-way through various years).

Table 4
MMC's Impact on Insurance Coverage

	Medicaid coverage							
Full-Year MMC Penetration Rate	-0.1025	-0.1585	-0.0217	-0.0720	-0.1860	-0.0994	-0.0766	-0.0085
	(0.0339)	(0.0417)	(0.0264)	(0.0323)	(0.0736)	(0.0438)	(0.0845)	(0.0170)
Adjusted R^2	0.3046	0.2245	0.0338	0.3450	0.2807	0.3046	0.3612	0.1528
	Private coverage							
Full-Year MMC Penetration Rate	-0.0384	-0.0729	0.0045	-0.0049	-0.0700	-0.0416	0.1440	0.0252
	(0.0749)	(0.0950)	(0.0575)	(0.0687)	(0.0921)	(0.0676)	(0.1113)	(0.0188)
Adjusted R^2	0.3639	0.2674	0.0830	0.3189	0.3843	0.3639	0.3932	0.3043
	Uninsured							
Full-Year MMC Penetration Rate	0.1121	0.1727	0.0312	0.0694	0.1892	0.1088	-0.0156	-0.0074
	(0.0461)	(0.0665)	(0.0517)	(0.0436)	(0.0723)	(0.0502)	(0.1412)	(0.0236)
Adjusted R^2	0.0691	0.0680	0.0610	0.0563	0.1255	0.0692	0.1119	0.1768
Sample	True intervention 1995-2003	Under 300%	Over 300%	Excellent Health	Not Excellent Health	Add Regional URATE	Placebo Test 1992-1997	Placebo Test – Adult men
Sample Size	3,286	2,240	1,046	1,706	1,580	3,286	1,630	3,614

Notes: All regressions include CPS analytic weights and estimated as linear probability models. Models include dummies for child's age (0, …, 17), sex, race (white/black/other), and household's poverty status (0-100, 100-200, 200-300, 300+). In additional, there are region dummies (3 MSAs and the remainder of KY), year dummies (1996-2004) and a constant term. Sample restricted to Kentucky children ages 0 to 17. Sample excludes children with imputed values for health insurance coverage. Robust standard errors in parentheses and corrected for non-nested clustering at the REGION and YEAR level. In the first placebo test, the calendar year 1994 was excluded due to lack of information on imputed values. In the second placebo test, adult men aged 25-64 were used in place of the children aged 0-17.

Appendix Table 1
Does mobility matter?

Transition probabilities
All children 6-17

	Region 3 (Passport) 2000	Region 5 (KHS) 2000	All other regions 2000
Region 3 (Passport) 1995	27.09	0.21	0.45
Region 5 (KHS) 1995	0.20	15.17	0.56
All other regions 1995	0.50	0.61	55.22

Transition probabilities
Only movers, 6-17

	Region 3 (Passport) 2000	Region 5 (KHS) 2000	All other regions 2000
Region 3 (Passport) 1995	27.11	0.49	1.07
Region 5 (KHS) 1995	0.47	16.53	1.34
All other regions 1995	1.19	1.45	50.35

Transition probabilities
Low income movers, 6-17

	Region 3 (Passport) 2000	Region 5 (KHS) 2000	All other regions 2000
Region 3 (Passport) 1995	25.52	0.36	0.99
Region 5 (KHS) 1995	0.52	15.26	1.46
All other regions 1995	1.27	1.59	53.03

Transition probabilities
High income movers, 6-17

	Region 3 (Passport) 2000	Region 5 (KHS) 2000	All other regions 2000
Region 3 (Passport) 1995	30.70	0.80	1.27
Region 5 (KHS) 1995	0.36	19.40	1.08
All other regions 1995	0.98	1.12	44.28

Appendix Table 2
Include Only Regions/Time Periods where FY MMC Penetration is 0 or 1
MMC's Impact on Insurance Coverage

	Medicaid coverage							
Full-Year MMC Penetration Rate	-0.0941	-0.1231	-0.0373	-0.0358	-0.2136	-0.0946	0.0925	0.0081
	(0.0381)	(0.0752)	(0.0243)	(0.0609)	(0.1017)	(0.0381)	(0.0852)	(0.0189)
Adjusted R^2	0.3834	0.3428	0.0618	0.3737	0.3979	0.3834	0.5235	0.1089
	Private coverage							
Full-Year MMC Penetration Rate	-0.0414	-0.0699	-0.0017	0.0401	-0.1006	-0.0415	0.0719	-0.0058
	(0.0668)	(0.0922)	(0.0788)	(0.1010)	(0.0881)	(0.0690)	(0.1075)	(0.0252)
Adjusted R^2	0.4234	0.3750	0.0626	0.3331	0.4746	0.4234	0.5408	0.3004
	Uninsured							
Full-Year MMC Penetration Rate	0.1253	0.1849	0.0333	0.0210	0.2761	0.1257	-0.1855	-0.0105
	(0.0399)	(0.0415)	(0.0679)	(0.0836)	(0.0777)	(0.0434)	(0.1112)	(0.0311)
Adjusted R^2	0.1280	0.1600	0.1017	0.1124	0.2269	0.1280	0.2193	0.2294
Sample	True intervention 1995-2003	Under 300%	Over 300%	Excellent Health	Not Excellent Health	Add Regional URATE	Placebo Test 1992-1997	Placebo Test – Adult men
Sample Size	1,225	705	520	647	578	1,225	556	1,417

Notes: All regressions include CPS analytic weights and estimated as linear probability models. Models include dummies for child's age (0, …, 17), sex, race (white/black/other), and household's poverty status (0-100, 100-200, 200-300, 300+). In additional, there are region dummies (3 MSAs and the remainder of KY), year dummies (1996-2004) and a constant term. Sample restricted to Kentucky children ages 0 to 17. Sample excludes children with imputed values for health insurance coverage. Robust standard errors in parentheses and corrected for non-nested clustering at the REGION and YEAR level. In the first placebo test, the calendar year 1994 was excluded due to lack of information on imputed values. In the second placebo test, adult men aged 25-64 were used in place of the children aged 0-17.