Crime Doesn't Pay... Do Medicaid Cuts? An Analysis of the Causal Effect of Medicaid Disenrollment on Crime Rates

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1 Abstract

In April 2023, the "continuous coverage" provisions of Medicaid, enacted during COVID, expired and has led to 20 million Americans losing Medicaid coverage (KFF, 2024). This paper examines the causal relationship between Medicaid disenrollment and crime rates. The results provide insight into the future impacts of the mass disenvolument currently in process in the United States. I explore this relationship using a policy change in Tennessee in 2005. The new Medicaid policy led to reduction in Medicaid coverage in Tennessee by 190,000, which amounted to 10% of those on Medicaid and 3% of the Tennessee population. The disenrolled individuals were primarily able-bodied, childless, low-income adults. I use the FBI Uniform Crime Reporting Program Data for the years 2002-2007 to conduct a difference-in-difference analysis on crime, violent crime, property crime, and drug related crime rates. I expected to find that crime rates increased, particularly drug related arrests and property crime, as Medicaid expansions have been found to reduce crime rates (Volger, 2017; Wen, 2017). I find that the TennCare disenrollment in 2005 caused a 5.42% decrease in violent crime and a 5.66% increase in property crime. However, the level of precision falls short of a statistically significant relationship. I do not reach a conclusion about the relationship between disenvolument and total or drug related crimes.

2 Acknowledgment

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3 Introduction

We are currently living through what experts are calling "The Great Unwinding of Medicaid." In 2020, Congress's omnibus budget bill required states to provide continuous coverage during the pandemic. In December 2022, Congress mandated that states resume eligibility requirements on March 31, 2023 and re-evaluate the eligibility of individuals currently enrolled in Medicaid within twelve months. Since March 31, states have re-evaluated approximately 66% of Medicaid enrollments, leading to more than 20 million Americans being disenrolled from Medicaid. However, only 7% of those disenrollments have been due to ineligibility. 1 out of every 5 cases examined has resulted in a termination due to procedural reasons (Kaiser Family Foundation, 2024). The full impact of this mass disenrollment in process remains to be seen.

This paper examines the impact of Medicaid disenrollment on overall, violent, drug, and property crime rates. I explore this relationship by leveraging Tennessee's mass disenrollment in 2005 to set up a difference-in-difference estimate to compare counties with high levels of disenrollment to counties with low levels of disenrollment. This research adds to the growing research on the relationship between health care and crime rates, and to debates on public health, welfare spending, and public safety.

I find a 5.42% decrease in violent crimes and a 5.66% increase in property crimes as a result of the TennCare disenrollment. Both estimates are imprecise. The increase in property crime and decrease in violent crime could have lasting implications for policy as millions of Americans have been and will be disenrolled from Medicaid.

Beyond "The Great Unwinding", the negative relationship between violent crimes and Medicaid disenrollment and positive relationship between property crimes and disenrollment could have vast political implications. There have been many bills in recent years, primarily from House Republicans, proposing Medicaid cuts in an effort to reduce the federal budget deficit. Efforts have been made to repeal the Affordable Care Act (ACA), which expanded coverage to all adults below 133% of the federal poverty line, and cut Medicaid spending by as much as 33%. The American Health Care Act of 2017, which was designed to repeal and replace the Affordable Care Act, passed in the House but not in the Senate. It would have caused an additional 14 million Americans to become uninsured within two years (CBO, 2017).

The relationship between disenvolument and various crime rates also has financial implications for the US. The US spends significant energy and funds on preventing and punishing crime. Anderson (2021) estimated that the total annual cost of crime, excluding transfers from victims to criminals, was \$2.9-\$3.9 trillion. He calculated this number using the cost of total crime-induced production, opportunity costs, and risk to life and health. National health expenditures are approximately equal, at \$2.7-\$4.3 trillion a year (CMS, 2021). Policy makers should understand and consider additional costs or benefits that may be incurred, such as a change in the societal cost of crime, when considering healthcare budget cuts.

There are two mechanism that could cause Medicaid disenrollment to lead to an increase in various crime rates. The first mechanism is a decrease utilization of treatment centers. Mental health and substance abuse often co-occur with crime. 1% of adults with no substance use disorder or mental illness are arrested each year, compared to 2% with only a mental illness, 9% with only a substance abuse disorder, and 12% of adults with co-occurring mental illness and substance abuse disorder (Pew, 2023). Further restricting access to treatment centers through Medicaid disenrollment could increase the rate of substance abuse disorders, mental illness, and co-occurrences, and therefore the rate of crime.

The second mechanism is the income effect from the financial strain disenvolument creates. When an individual's income lowers, the cost of crime also lowers. This is primarily because the opportunity cost of crime, spending that time earning income in legal ways, is lower. The marginal benefit of committing a financially motivated crime, such as property crime and manufacturing or selling drugs, may also be higher when income is lower. Additionally, the sudden negative financial shock can further contribute to the mental health and substance use disorder struggles of an individual, exacerbating the impacts of decreased access to treatment (Kiely, 2015; Glei, 2019; Shaw, 2011).

While the benefits of Medicaid expansions have been explored, particularly the ACA expansion in 2010, the potential harms or benefits of Medicaid disenrollment is a less explored area. Disenrollment may have impacts of an lesser or greater magnitude than enrollment benefits. This is particularly important research as it explores the impact of disenrollment of childless adults, the group now most at risk of losing coverage gained from ACA. This paper finds a 5.42% decrease in violent crime and a 5.66% increase in property crime from the 2005 TennCare disenrollment.

4 Literature Review

4.1 Medicaid and Crime

In March 2024, the first working paper examining the effect of Medicaid disenrollment on crime was released. Deza, Lu, Maclean, and Ortega (2024) also explore the effect of TennCare disenrollment on crime rates. They use the same data as this paper, the Uniform Crime Reporting System data, to compare counties with high exposure to the policy to counties with low exposure to the policy. They define a high exposure county as a county with a Medicaid enrollment rate above the median just before 2005 to counties and a low exposure county as a county with a Medicaid enrollment rate at or below the median just before 2005. They find a statistically significant increase in total crime, violent crime, and non-violent crimes rates, with a particularly strong increase in non-violent crime rates. They hypothesize that the mechanisms are due to economic instability and access to mental health services.

There have also been several studies on the effect of Medicaid expansion on crime rates. Volger (2017) used the variation in state's expansion of Medicaid eligibility and coverage after the passage of the Affordable Care Act (ACA) to explore the effects on crime. The Affordable Care Act expanded coverage to all adults under 133% of the federal poverty line, including the categories disenrolled from TennCare: childless adults and uninsurables. He found that the ACA's expansion of Medicaid coverage led to a 3% decrease in reported crime, particularly violent and property crimes, saving the US approximately \$13 billion a year. Simes and Jahan (2022) had a similar finding when examining the effects of Medicaid expansion under ACA on the number of arrests in the US. They find a 20-32% decrease in the number of arrests in the first three years after expansions. The most significant reduction was in drug related arrests.

Wen, Hockenberry, and Cummings (2017) looked at the impact of the Health Insurance Flexibility and Accountability (HIFA) waivers, which allowed states to offer coverage to all adults living below 200% of the federal poverty line. They found that HIFA led to a significant decrease in robbery, aggravated assault and larceny theft. The mechanism they identified was an increased utilization of substance use disorder (SUD) treatments and corresponding decrease in substance use prevalence.

Medicaid has been shown to increase utilization of mental health and substance use services. Winklemen (2016) found that, among individuals currently or previously involved with the justice system experiencing depression, alcohol dependence, and illicit drug dependence, Medicaid was associated with a significant increase in receiving treatment, compared to those without any insurance. Similary, Jacome (2022) found that men who lost Medicaid eligibility in a South Carolina policy change were more likely to be incarcerated, largely due to less access to mental health resources. Bondurant, Lindo, and Swensen (2018) found that, for each additional substance abuse treatment center that opened in a county, total felonies in each municipal in that county fell by 0.10% annually. This reduced annual costs of county level crime by \$4.2 million per county per year.

Medicaid expansion may be particularly relevant to crime rates when it is providing insurance to individuals with a history of criminal behavior. Aslim, Mugan, and Yu (2022) estimated that Medicaid expansions reduced the rate of recidivism by 11.5% a year. This is significant because, as of 2008, 90% of individuals in local and county jails or detention centers are uninsured and, as of 2016, 50% of those in state jails and 70% of convicted criminals have a prior history of arrests (Wang, 2008; Wang, 2022; Reaves, 2006). Approximately a third of all individuals released from prison were expected to become eligible for Medicaid through the ACA (Cuellar, 2012).

4.2 Medicaid Disenrollment

While the effect of Medicaid disenrollment on crime has not been fully explored, there are many papers exploring other impacts of disenrollment. Maclean, Tello-Trillo, and Webber (2019) explored the effects of TennCare's disenrollment on the utilization and financing of mental illness and SUD related hospitalizations. SUD-related hospitalizations decreased, and the financing of them shifted entirely to patients. Mental health hospitalizations remained the same and the financial burden partially shifted to private insurance and Medicare. They conclude that lower income adults with behavioral health conditions were worse off because of the disenrollment. They find that the disenrollment resulted in a 7.7% increase in suicides and a 28.9% increase in fatal alcohol poisonings and drug overdoses in non-elderly adults in Tennessee.

Similar studies have measured other access to care outcomes. Tello-Trillo, Ghosh, Simon, and Maclean (2015) found that overall hospital utilization in Tennessee after 2005 fell by 4.6%. Self reported access to health also declined, primarily due to cost-related barriers (Tarazi, 2017). Utilization of preventative services, such as breast exams, decreased by 4% while the average number of days Tennessee individuals were incapacitated by their health increased by 20% (Tello-Trillo, 2021).

The TennCare disenrollment was also found to cause negative financial outcomes. The disenrollment did not lead to an increase in employment as a means to receive insurance again: the fraction of adults covered by Medicaid decreased by 5% and the fraction of adults uninsured increased by almost 5% (DeLeire, 2019). Instead, the financial harm from disenrollment outweighs the financial benefits of gaining Medicaid (Argys, 2020). It caused negative financial outcomes, such as lower credit scores and more debt delinquency. Individuals with medical debt and no insurance are less likely to be able to afford food, heat, and shelter, or have savings (Doty, 2008).

These studies on disenrollment indicate that there is significant harm that comes from disenrollment, including decreased access and utilization of health care, increased financial harm, increased substance related deaths, and increased crime. Studies on Medicaid expansion determine that there is significant positive benefits from expanding health insurance, such as lower crime rates and an increase in utilization of treatment centers. This paper adds to the literature, and contradicts some findings, by determining that Medicaid disenrollment leads to a decrease violent crimes and an increase in property crimes.

5 Institutional Context

Tennessee's Medicaid program, called TennCare, was established in 1965. From 1965-1994, TennCare operated on a fee-for-service basis and received federal matching funds that covered 64.8% of the cost of Medicaid. In 1994, then Governor Ned Ray McWherter responded to changing financial and political tides and implemented a federal waiver to reform TennCare. All Medicaid recipients were enrolled in capital managed care. Private health insurance companies, referred to as managed care organizations (MCOs), were given a lump sum for each enrollee and made responsible for administering health care and managing costs. The extra money received from the federal government and saved from this cost effective program was used to expand Medicaid eligibility to low-income, non-disabled, childless adults and uninsurables. Individuals above the federal poverty line paid on a sliding scale. TennCare coverage quickly increased by 300,000 individuals. Tennessee had one of the lowest uninsured rates and cost per enrollee in the country (Bonnyman, 2006).

By the early 2000s, the program's costs had begun outpacing Tennessee's revenue. States across the country were struggling to maintain Medicaid in the face of rapidly rising medical costs. Tennessee also relaxed their disciplined cost control measures and Tennesseans started pushing for Medicaid cuts to reduce income taxes. In 2002, then Governor Phil Bredesen was elected, campaigning on the promise to get TennCare under control. In 2002, he re-examined the eligibility of all TennCare enrollees in preparation for his upcoming disenrollment policy. In January 2005, Governor Bredesen announced TennCare was returning to a basic Medicaid plan, by restricting eligibility and decreasing benefits. The most notable change was eliminating coverage for uninsurables and childless adults (Spears, 2017). By August 2005, individuals began losing coverage. Over the next four months, 190,000 individuals, approximately 10% of those on Medicaid and 3% of the population, were disenrolled from TennCare (Division of TennCare, n.d.).

Figure 1 demonstrates the sharp decline in Medicaid enrollees beginning in July of 2005.



Table 1 contains descriptive statistics of the change in TennCare enrollment from June 2005 to June 2006 by age and gender, compiled from Division of TennCare data.

Percent Change	Change in Count
-1.68%	-89,986.4
-1.18%	-62,489.5
0.28%	26,759.6
-0.04%	-1,540.2
-2.37%	$-134,\!887.7$
-0.74%	-42,807.5
-2.86%	152,475.9
	Percent Change -1.68% -1.18% 0.28% -0.04% -2.37% -0.74% -2.86%

Table 1: Change in TennCare Enrollment from June 2005 to June 2006

6 Data

This paper utilizes the FBI Uniform Crime Reporting Data (US Department of Justice). This panel data contains arrest counts, reported voluntarily by police agencies in the United States on a monthly basis. The data reports on 43 types of crime, including those that fall into the categories of property crime, violent crime, and drug related crimes. It also identifies counts of arrest per crime by race, age, and gender.

The data reports arrest counts per police agency and the population under the jurisdiction of each agency. I construct crime and individual offense rates by summing the arrest counts – by offense and aggregated– and population up to the county level, and then dividing the total number of arrests by the total population in each county. I multiply that number by 100,000 to find crime rates, violent crime rates, drug related crime rates, and property crime rates per 100,000 people in each of Tennessee's 95 counties.

I construct a violent crime variable using the offenses murder, non negligent manslaughter, forcible rape, robbery, and aggravated assault. I construct a property crime variable using the offenses burglary, larceny-theft, motor vehicle theft, and arson. I construct a drug related crime variable using the offenses under the categories of sale, manufacturing, or possession of opium, cocaine and their derivatives, marijuana, synthetic narcotics, or other dangerous non-narcotic drugs (FBI, 2012).

I use data from the Tennessee Department of Health Division of TennCare, provided by Sebastian Tello-Trillo, to calculate Medicaid disenrollment rates. The data set includes the number of people enrolled in TennCare in each county by month beginning in January 2005. I calculate the average percent of people in TennCare in each county from February to June of 2005, just before the policy took effect, and the average percent of people in TennCare in each county from February to June of 2006, just after the policy took effect. To determine the percent of residents disenrolled from TennCare per county due to the policy, I subtract the 2005 averaged percent of people in TennCare from the 2006 averaged percent of people in TennCare. I compare counties with a disenrollement rate above the median to counties with a disenrollement rate at or below the median, which is 3.99%.

Figure 2 illustrates the distribution of disenrollement rates in Tennessee counties. The x-axis represents the rate that residents in the county were disenrolled and the y axis represents how many counties fall into each bin. The counties are separated into quartiles by the vertical lines, with the 25th percentile at 3.09%, the median at 3.99%, and the 75th percentile at 5.59%. The yellow line falls on the mean: 4.33%. The county with the

least disenrollment had 0.67% of residents disenrolled and the county with the most disenrollment had 10.99% of residents disenrolled from TennCare. There are approximately 24 counties in each quartile, totaling to 95 Tennessee counties



I supplement my research with additional datasets to control for demographic, economic, and law enforcement covariates by county. To account for differences in policing by county, I control for the number of police officers per capita (FBI, 2006). I control for the percent of the county population that is White, Black, Asian, and Native American and between the ages of 10-19, 20-29, 30-39, and 40-49 (National Cancer Institute, 2022). Lastly, I control for the percent of people living below the poverty line, the median income, and the unemployment rate of each county (U.S. Census Bureau) (U.S. Bureau of Labor Statistics).

7 Empirical Strategy

This paper uses a difference-in-difference method to explore the causal effects of Medicaid disenrollment on crime rates. I use counties in Tennessee that had high disenrollment rates, above the median of 3.99%, as my treatment group and counties in Tennessee that had low disenrollment rates, at or below 3.99%, as my control group. Counties with fewer residents disenrolled from TennCare will be less effected by the policy change than counties with many residents disenrolled from TennCare.

I use the time period 2002-2007. I begin in 2002 because, in early 2002 Tennessee required all residents to re-verify their TennCare eligibility. Many individuals previously enrolled were dropped from the program (Division of TennCare). I end at 2007 to avoid the effects of the recession, which began in December 2007.

As I am using aggregated crime data, I can not narrow my scope to only the outcomes of individuals who were disenrolled. However, disenrollment does not only affect those directly targeted. Disenrollment can have spillover effects and influence the decision making of others. For example, individuals in a long term, childless relationship or parents taking care of an uninsurable adult child would be deeply affected by the disenrollment of their partner or child. Additionally, while the primary target of disenrollment was childless adults and uninsurables, others were also affected by the decrease in benefits. To capture the full impact of Medicaid disenrollment it is necessary to look at the outcomes of counties as a whole.

To estimate the causal effect of Medicaid disenrollment on specific and overall crime rates I use the equation:

$$Y_{ct} = \beta_0 + \beta_1 (Post \times treated) + \nu_t X_{ct}) + \alpha_c + \delta_t + \epsilon_{ct}$$

Outcome Y_{ct} is the crime rate for aggregate or specific crimes in county c and year t. Post×treated is a dummy variable that takes the value of 1 in treated counties after the policy was implemented in 2005. The coefficient, β_1 , is the difference-in-difference estimator that represents the effects of TennCare disenrollement on crime rates. X_{ct} is a vector of the county level controls. α_c represents county fixed effects and δ_t represents year fixed affects.

In this paper, I calculate the percent of people disenrolled from TennCare and the number of arrests per 100,000 people within each county in Tennessee. I explore the difference in the trends of crime, violent crime, drug related crime, and property crime rates between counties with disenrollment rates above and below the median. I find the TennCare disenrollment in 2005 caused a 5.43% decrease in violent crime and a 5.66% increase in property crime but no statistically significant results.

8 Results

8.1 Internal Validity

The analysis relies on the assumption that, before the policy change in 2005, counties with high and low levels of disenrollment had similar crime rate trends. I plot an event study to test my parallel trend assumption and to visualize the effect of the policy on crime rates after 2005. I also test the power of my pre-trends assumption. Figure 3 demonstrates that the parallel trend assumption for all crime rates was not sufficiently fulfilled. There is a clear increase in crime rates before 2005. I also find that, if the true slope of my pre-trends was 269.575, I would only detect a significant pre-trend violation 50% of the time, which is of similar magnitude to 239.69, the estimated post treatment slope. Therefore, I conclude that the parallel trends assumption was not and I cannot determine a casual relationship between disenrollment and overall crime rates.



Figure 3: TennCare Disenrollment Effect on Crime Rates Event Study

Figure 4 looks at violent crimes only. Both counties with high and low disenrollment rates appear to have similar rates before the policy. However, the robustness check in Figure 8 indicates that the parallel trends assumptions is not consistently met regardless of specifications. The pre-trend test reveals that I would detect a true pre-trend slope of 9.81 50% of the time. This is a larger slope than my estimated post treatment slope of 6.87. I do not reject the parallel trends assumptions, but it is not met with certainty.

Figure 4: TennCare Disenrollment Effect on Violent Crime Rates Event Study



Figure 5 shows that drug related crime rates do not meet the parallel trends assumptions. The pre-trend test finds that I would detect a parallel trends violation 50% of the time if that true slope was 39.77. The approximate post treatment slope is 8.31, which is much smaller. Because of the lack of parallel trends, I cannot draw conclusions about the effect of TennCare disenrollment on drug related crimes in Tennessee.



Figure 5: TennCare Disenrollment Effect on Drug Crime Rates Event Study

Figure 6 indicates that the pre-2005 trends of both high and low disenrollment counties are similar. Figure 10, the robustness check on property crime rates, more clearly illustrates a consistent parallel trend before 2005 and robust findings. The pre-trend test reveals that at 50% power I would detect a true slope of 27.75. The estimated post treatment slope is 61.28 so I can feel confident that I would detect a similar pre-trend slope.

Figure 6: TennCare Disenrollment Effect on Property Crime Rates Event Study



8.2 Disenrollment Effects of Crime Rates

Table 2 summarizes my main findings. I find that violent crimes decrease by 11.69 arrests per 100,000 residents or 5.42%. Property crimes increase as a result of the Medicaid disenrollment by 30.65 arrests per 100,000 residents or 5.66%. Between 2002 and 2005, Tennessee county's violent and property crime rates fluctuate up to 3.5% and 4% each year, respectively, so a 5.42% and a 5.66% change as a result of the disenrollment is notable. These findings are not significant at the 1%, 5%, and 10% level. Even though total crime rates and drug related crime rates do not satisfy the parallel trends requirement, I include the findings in my tables below.

Outcome:	Crime Rate	Violent Rate	Property Rate	Drug Rate
Post*Treated	-139.4	-11.69	30.65	-28.63
	(304.0)	(12.40)	(34.02)	(47.32)
Average Rate Pre-Policy	6,364.97	215.58	541.79	543.62
Percent Change	-2.19%	-5.42%	5.66%	-5.27%
Observations	940	940	940	940

Table 2: Effect of Disenrollment on Crime Rates

Table 3 presents similar results, but displays the effects of a county going from 100% of it's residents being enrolled in TennCare to 0% of residents enrolled in TennCare. This disenrollment would lead to a decrease in violent crime rates by 403.10 arrests per 100,000 residents and an increase in property crimes by 976.60 arrests per 100,000 residents. These estimates are also statistically insignificant.

Table 3: Effect of Disenrollment on Crime Rates

Outcome:	Total Crime	Violent Rate	Property Rate	Drug Rate
Post*Percent Disenrolled	$-10,\!640.10$	-403.10	976.60	-1,893.00
	(7,040.2)	(317.7)	(788.6)	(1, 372.7)
Observations	940	940	940	940

I also examine the relationship between TennCare disenrollment and economic outcomes, which I control for when examining crime rates. I find that counties with disenrollment levels about the median experience a 0.41 percentage point increase in poverty, a decrease in median income by \$405.10 and an decrease in unemployment by 0.07 percentage points. These estimates are also imprecise at the 1%, 5%, and 10% level.

Outcome:	Poverty Rate	Median Income	Unemployment Rate
Post*Treated	0.41	-405.10	-0.07
	(0.25)	(252.3)	(0.22)
Observations	940	940	940

Table 4: Effect of Disenrollment on Economic Outcomes

8.3 Robustness

I run a range of robustness checks on my findings. Crime, violent crime rates, and drug related crime rates are not robust findings. However, the property rates event study is robust.

I create new specifications using a different measure of treated counties, excluding outliers, comparing agencies instead of counties, comparing only the top and bottom county quartiles, and removing all controls. In my main specifications, the treated category is created by calculating the number of individuals disenrolled from Medicaid. I constuct an event study using counties with the highest number of individuals on Medicaid right before the policy as my treatment, as Deza et al do (2024). These "exposed" counties are at a higher risk of disenvolument as they have the most individuals enrolled in TennCare just before the disenvolument. I construct an event study excluding outliers, namely the counties with the top and bottom 1% of disenvolument numbers. I construct an event study at the police agency level of analysis, still using the the Uniform Crime Reporting Program Data. I construct an event study using only the top and bottom quartiles of disenrollment, rather than above and below the median. Lastly, I construct my event study without any controls. The event studies without controls can be found in Appendix A. The robustness checks are found in Figures 7, 8, 9, and 10 below. There are significant changes in overall crime, violent crime, and drug related crime rates when I vary the specifications but not for property crime rates.





Figure 7: Crime Rate Robustness



Figure 9: Drug Crime Robustness





9 Mechanisms

This paper finds a decrease in violent crime rates and an increase in property crime due to TennCare disenrollement. As overall and drug related crimes do not meet the parallel trend assumptions, I do not draw any conclusions about the relationship between drug crimes and Medicaid disenrollment. As none of my findings are statistically significant, it is possible that the TennCare disenrollment had little or no impact on violent, property, drug, or overall crime rates. This could be because crime rate and access to health care are not as correlated as the research so far suggests. It may also be that TennCare disenrollment was too small of a shock to lead to significant changes in crime rates even if healthcare, particularly the expansion from the ACA, does impact crime rates. However, my property finding results are both more robust and more powerful and therefore may reflect a true relationship between property crime and Medicaid disenrollment.

If the trends I detect are a reflection of TennCare disenrollment's impact on crime rates, there are several possible explanations. First, the decrease in violent crime rates could be a result of the decrease in unemployment that is shown in Table 3. It is possible that the disenrollment from TennCare motivated individuals to get a job, perhaps in hopes of gaining employee-sponsored health insurance or for more disposable income. As there is a positive correlation between unemployment rates and crime rates, the decrease in violent crime rates could be partially due to the decrease in unemployment (Raphael, 2001) (Tarling, 1982). However, previous research has found a positive causal effect of Medicaid disenrollment on unemployment rates, suggesting the relationship between Medicaid disenrollment and unemployment rates requires further inquiry (DeLeire, 2019). Another explanation could be that, in the wake of this mass disenrollment, affected communities or non-profit groups stepped in to fill financial, resouce, and well being gaps and support one another through the hardship. The disenrollment could have triggered community building that negated the impact of disenrollment on some forms of crime, such as violent crimes.

The increase in property crime could be due to the shift in the costs and benefits of crime that results from losing Medicaid. Individuals who were not previously committing property crimes, defined as burglary, larceny-theft, motor vehicle theft, and arson, may have a higher financial incentive to commit property crimes and obtain more assets. The increased financial strain that could lead to property crimes is reflected by the increase in poverty rate and decrease in median income in Table 4 and in prior research.

Lastly, when I increase the time span to include the years 2008 and 2009, the violent crime rate returns to pre-2005 levels, as seen in Figure 11. The mechanism for the decrease in violent crime rates after the disenrollment did not seem to continue beyond two years. There may have been an initial shock caused by the mass disenrollment that led to a decrease in violent crime rates, but it does not appear to have lasted. By 2009, violent crime rates returned to around their pre-2005 levels. However, figure 12 illustrates that the increase in property crime continues beyond 2007, suggesting Medicaid disenrollment

may have had a lasting impact on property crime rates.





Figure 12: TennCare Disenrollment Effect of Property Rate 2000-2009 Event Study



10 Discussion

I utilizing the mass disenrollment in Tennessee in 2005, in which almost 200,000 individuals were disenrolled from TennCare to explore a casual relationship between Medicaid disenrollment and crime rates. I compare counties in Tennessee that had a high rate of disenrollment to counties in Tennessee that had a low rate of disenrollment. I find a 5.42% decrease in violent crime and 5.66% increase in property crime as a result of the TennCare disenrollment in 2005. Neither relationship is statistically significant. The increase in property crime rates is in agreement with my hypothesis and other research, particularly Deza et al (2024) who conduct a similar study and find a strong increase in property crimes after disenrollment. The decrease in violent crime is counter to my hypothesis and to existing research.

As these results do not completely align with my hypothesis or with prior research, which finds a positive effect of disenrollment on all crime rates, they warrant further exploration. It is possible that Medicaid disenrollment has no impact on crime, violent crime, drug crime, or property crimes rates, even if expanding access to Medicaid does. Crime may not need to be a secondary consideration when considering healthcare disenrollment policies.

It is also possible that, as this paper finds, losing access to Medicaid does impact crime, but does not have the equal and opposite impact of Medicaid expansion. I find that Medicaid disenrollment leads to sustained increase in property crime and lowers violent crime in the years following the policy. Previous research shows that expanding access to Medicaid can decrease crime rates, and that individuals disenrolled from Medicaid experience financial and health hardships as a result. More exploration should be done on the trade-offs in crime rates, short verse long term impacts, and other measures of well being that result from Medicaid disenrollment.

11 Bibliography

- Anderson, David A. "The aggregate cost of crime in the United States." The Journal of Law and Economics 64, no. 4 (2021): 857-885.
- Argys, Laura M., Andrew I. Friedson, M. Melinda Pitts, and D. Sebastian Tello-Trillo. "Losing public health insurance: TennCare reform and personal financial distress." Journal of Public Economics 187 (2020): 104202.
- Aslim, Erkmen Giray, Murat C. Mungan, and Han Yu. "A Welfare Analysis of Medicaid and Crime." George Mason Law & Economics Research Paper 22-11 (2022).
- Bondurant, Samuel R., Jason M. Lindo, and Isaac D. Swensen. "Substance abuse treatment centers and local crime." Journal of Urban Economics 104 (2018): 124-133.
- Bonnyman, Gordon. "The tenncare cuts: Plunging into the unknown." Tennessee Justice Center, April 25 (2006).
- CBO. "Congressional Budget Office Cost Estimate: H.R. 1628 American Health Care Act of 2017." Congressional Budget Office. (2017)
- CMS. "NHE Fact Sheet". Center for Medicare & Medicaid Services. (2021)
- Cuellar, Alison Evans, & Jehanzeb Cheema. "As roughly 700,000 prisoners are released annually, about half will gain health coverage and care under federal laws." Health Affairs 31, no. 5 (2012): 931-938.
- DeLeire, Thomas. "The Effect of Disenrollment from Medicaid on Employment, Insurance Coverage, and Health and Health Care Utilization." In Health and Labor Markets, pp. 155-194. Emerald Publishing Limited. (2019).
- Deza, M., Lu, Th, Maclean, J., & Ortega, A. "Losing Medicaid and Crime." National Bureau of Economic Research. (2024). "http://www.nber.org/papers/w32227".
- Division of TennCare. "Enrollment Data." Tennessee Government. https://www.tn.gov/tenncare/information-statistics/tenncare-timeline.html.
- Division of TennCare. "TennCare Timeline." Tennessee Government. https://www.tn.gov/tenncare/information-statistics/enrollment-data.html

- Doty, Michelle M., Sara R. Collins, Sheila D. Rustgi, & Jennifer L. Kriss. "Seeing red: The growing burden of medical bills and debt faced by US families." Issue Brief (Commonw Fund) 42 (2008): 1-12
- FBI. "Violent Crime." FBI. (2012). https://ucr.fbi.gov/crime-in-the-u.s/2011/crime-inthe-u.s.-2011/violent-crime/violent-crime.
- FBI. "Property Crime." FBI. (2012). https://ucr.fbi.gov/crime-in-the-u.s/2011/crime-inthe-u.s.-2011/property-crime/property-crime.
- FBI. "Crime in the US." FBI, (2006). https://www2.fbi.gov/ucr/cius2006/police/county_gencies.html.
- Garthwaite, Craig, Tal Gross, & Matthew J. Notowidigdo."Public health insurance, labor supply, and employment lock." The Quarterly Journal of Economics 129, no. 2 (2014): 653-696.(2021): 857-885.
- Glei, Dana A., & Maxine Weinstein. "Drug and alcohol abuse: the role of economic insecurity." American journal of health behavior 43, no. 4 (2019): 838-853.
- Heflin, Colleen. "Family instability and material hardship: Results from the 2008 Survey of Income and Program Participation." Journal of Family and Economic Issues 37 (2016): 359-372.
- Jacome, E. "Mental Health and Criminal Involvement: Evidence from Losing Medicaid Eligibility". Northwestern University. (2022). https://elisajacome.github.io/Jacome/Jacome_JMP.pdf
- Kaiser Family Foundation. "Medicaid Enrollment and Unwinding Tracker". Kaiser Family Foundation. (2024). https://www.kff.org/report-section/medicaidenrollment-and-unwinding-tracker-overview/ (2021): 857-885.
- Kiely, Kim M., Liana S. Leach, Sarah C. Olesen, & Peter Butterworth. "How financial hardship is associated with the onset of mental health problems over time." Social psychiatry and psychiatric epidemiology 50 (2015): 909-918.
- Maclean, Catherine, Daniel Tello-Trillo, & Douglas A. Webber. "Losing insurance and behavioral health hospitalizations: Evidence from a large-scale medicaid disenrollment." (2019).

- National Cancer Institute. "U.S. County Population Data 1969-2020." National Institute of Health. (2022). https://seer.cancer.gov/popdata/download.html
- Pew. "More Than 1 in 9 Adults With Co-Occurring Mental Illness and Substance Use Disorders Are Arrested Annually." Pew Trusts Research Center. (2023).
- Raphael, S., & Winter-Ebmer, R. Identifying the Effect of Unemployment on Crime. The Journal of Law Economics, 44(1), 259–283. (2001). https://doi.org/10.1086/320275
- Reaves, Brian A. "Violent felons in large urban counties." US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, (2006).
- Shaw, Benjamin A., Neda Agahi, & Neal Krause. "Are changes in financial strain associated with changes in alcohol use and smoking among older adults?." Journal of studies on alcohol and drugs 72, no. 6 (2011): 917-925.
- Simes, Jessica T., & Jaquelyn L. Jahn. "The consequences of Medicaid expansion under the Affordable Care Act for police arrests." Plos one 17, no. 1 (2022): e0261512.
- Spears, Mandy. "Understanding Medicaid and TennCare." The Sycamore Institute. (2017). https://www.sycamoreinstitutetn.org/what-is-tenncare/
- Tarazi, Wafa W., Tiffany L. Green, & Lindsay M. Sabik. "Medicaid disenrollment and disparities in access to care: evidence from Tennessee." Health services research 52, no. 3 (2017): 1156.
- Tarling, R. "Unemployment and Crime." Office of Justice Programs. (1982). https://www.ojp.gov/ncjrs/virtual-library/abstracts/unemployment-and-crime-1.
- Tello-Trillo, Sebastian. "Effects of losing public health insurance on preventative care, health, and emergency department use: Evidence from the TennCare disenrollment." Southern Economic Journal 88, no. 1 (2021): 322-366.
- Tello-Trillo, Sebastian, Ausmita Ghosh, Kosali Simon, & Johannah Maclean. "Losing Medicaid: What happens to hospitalization?" National Bureau of Economic Research no. 21580. (2015).
- United States Bureau of Labor Statistics. "Local Area Unemployment Statistics." https://www.bls.gov/lau/tables.htm#stateaa
- United States Census Bureau. "Small Area Income and Poverty Estimates (SAIPE)

Program." https://www.census.gov/programs-surveys/saipe/data/datasets. All.List
₁743592724. $html \# list - tab - List_1743592724$

- United States Department of Justice. Federal Bureau of Investigation. Uniform Crime Reporting Program Data: Arrests by Age, Sex, and Race, Summarized Yearly, United States. Inter-university Consortium for Political and Social Research [distributor]. https://www.icpsr.umich.edu/web/NACJD/series/57
- Vogler, Jacob. "Access to health care and criminal behavior: Short-run evidence from the ACA Medicaid expansions." Available at SSRN 3042267 (2017).(2021): 857-885.

12 Appendix A









Figure 16: Property Crime Rates Event Study - No Controls

