Research Note

Urban Affairs Review
2024, Vol. 60(1) 420–434

DOI: 10.1177/10780874231191703
journals.sagepub.com/home/uar

Political Underrepresentation Among Public Benefits Recipients: Evidence from Linked Administrative Data

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Abstract

People receiving government assistance have personal stakes in the political process and intimate knowledge of policy implementation. However, data limitations have made it hard to measure voting among those receiving assistance across various programs. Using linked administrative data from a large county in Pennsylvania, merged with the Pennsylvania voter file, we calculate voting rates among benefits recipients. We find that people receiving means-tested benefits (cash assistance, food assistance, health insurance, disability benefits, childcare, and housing) vote at just over half the rate of other county residents (45% compared with 84% in 2020). In the 2020 election, public benefits recipients comprised over 20% of the voting-eligible population but only 12% of voters. To the extent that benefits recipients are more supportive of generous welfare policy than nonrecipients and more familiar with administrative burdens programs impose, this underrepresentation may

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obscure popular preferences for social welfare provision and shape politicians' attentiveness to program design.

Keywords
voting, political participation, public benefits, administrative data

Introduction

For many people in the United States, government is not an abstract concept but a high-profile and consequential part of everyday life. Government policy delimits the resources low-income people have to provide for their families, from housing to healthcare to food to childcare, and dictates whether and how they can access this assistance. Indeed, one of the most important jobs of elected officials is to determine the scope and operation of the social safety net. Those receiving government benefits are important stakeholders in this process.

Moreover, for public benefits recipients, the government takes the shape of specific forms that must be filled out, phone calls that must be made to caseworkers, or eligibility tests that must be met in order to access benefits or services (Herd and Moynihan 2019). These street-level experiences with government can range from the empowering to the punitive, but in any form they generate intimate knowledge of government policy implementation (Bruch, Ferree, and Soss 2010; Michener 2018; Weaver, Prowse, and Piston 2019). Is this knowledge being incorporated into the political process? Are people with direct, personal experiences with food assistance, healthcare, and other benefits programs voting to elect officials that determine policy related to these programs?

Scholars have long argued that variation in rates of political participation yields "turnout bias," wherein policy tends towards the preferences of those who turn out to vote more often (Lijphart 1997). Existing empirical and theoretical work suggests that low-income people enrolled in means-tested benefits programs are likely disadvantaged by such turnout bias (Soss 1999; Lawless and Fox 2001), given the well-documented positive relationship between income and voter turnout (Rosenstone 1982; Brady, Verba, and Schlozman 1995; Denny 2016). Yet new research finds distinct attitudes about social welfare policy among means-tested benefits recipients, even accounting for demographic characteristics like age, gender, race, education, and income (Halling, Herd, and Moynihan 2022). Moreover, survey and interview-based measures have made it difficult to quantify differential voting among public benefits recipients. Although surveys of political participation may ask about income, they rarely ask detailed questions about

enrollment in government programs. Even when surveys collect this information, analysis is complicated by the reliability of self-reports of benefits receipt (Swartz et al. 2009; Mettler and Stonecash 2008) and relatively small sample sizes (Lawless and Fox 2001). To address these limitations, scholars have turned to administrative data, but these data have typically been restricted to single programs in isolation, limiting our ability to examine political behavior more broadly across public benefits recipients (Corman, Dave, and Reichman 2017).

This note uses linked administrative data from one large county, Allegheny County, Pennsylvania, which covers the city of Pittsburgh and its suburbs, with a population of over 1.2 million.[1] These data allow us to observe nearly the entire universe of people enrolled in a range of means-tested benefits programs in the county, including Temporary Assistance to Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), Medicaid, Supplemental Security Income (SSI), childcare assistance, and housing assistance. We link these data to state voter registration records to see whether people were registered or voted in specific elections. Relying on administrative records allows us to fairly accurately pinpoint who is eligible to vote and thus calculate accurate turnout rates among eligible people. It also allows us to calculate the share of benefits recipients among all eligible voters in the county, and to compare the representation of benefits recipients with nonrecipients.

We find that people enrolled in targeted government programs register and vote much less often than nonrecipients: In the 2020 general election, 45% of program recipients voted, compared with 84% of nonrecipients. Public benefits recipients were thus over 20% of the voting-eligible population but only 12% of voters. This is consistent with the benefit recipient population being poorer, less white, and younger than the nonrecipient population, characteristics underrepresented in the electorate. Our analysis does not aim to isolate the relationship between benefits receipt and voting but rather to describe the scope of underrepresentation among public benefits recipients in a populous U.S. county. To the extent that benefits recipients have different policy preferences than nonrecipients, such as with respect to social welfare generosity or program design, their underrepresentation could have important public policy consequences.

Voting Among Program Beneficiaries

We look at voting among benefits recipients by combining two administrative datasets. We begin with records of program enrollment from the Allegheny County Data Warehouse, focusing on people enrolled in the large, means-tested benefits programs listed in Figure 1: TANF, SSI, public

housing, Medicaid, SNAP, "Section 8" (including Housing Choice Vouchers and property-based subsidies), and childcare subsidies in the form of Child Care and Development Fund (CCDF) benefits. We observe approximately 200,000 Allegheny County residents who were enrolled in at least one of these programs between January and October 2020 and were of voting age during the 2020 general election.[2] Section 1 of the Supplemental Online Appendix provides additional information about the Data Warehouse and the completeness of these records. Then, we join these individual program records with several snapshots of the Pennsylvania voter file to observe whether people are currently registered, were registered in previous years, and whether they have voted in recent elections. We conducted this merge based on names, dates of birth, and gender. Section 2 of the Supplemental Online Appendix discusses the merge approach and validation in more detail.

Using this linked dataset, we calculate rates of voter registration and turnout in 2020 for recipients of specific benefits as well as for all program beneficiaries, as shown in Figure 1.[3] (Our analysis focuses on voting-age people receiving various means-tested benefits; our dataset does not consistently include information about citizenship status, although Allegheny

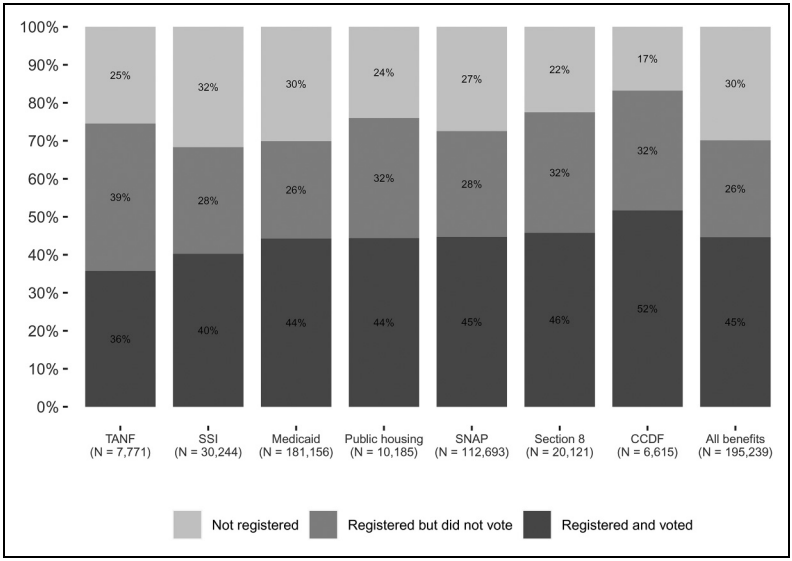

Figure 1. Registration and turnout in the 2020 general election among age-eligible Allegheny County residents who received public benefits between January 1, 2020 and October 31, 2020.

County has relatively few non-citizen residents (3%). Overall, about 70% of voting-age people who were enrolled in one of these benefits programs were registered to vote as of the 2020 election, and about 45% of them voted (unconditional on registration). These rates vary substantially across programs, with TANF recipients showing particularly low rates of participation and CCDF recipients registering and turning out at relatively high rates.

Table 1 explores program beneficiaries' representation within the electorate. About one in five voting-eligible Allegheny County residents receives benefits through at least one of the programs we study (the "Total" row does not represent the sum of all program-specific rows because some people are enrolled in multiple programs).[4] But benefits recipients are underrepresented among voters: Despite being over 20% of the voting-eligible population, they comprise less than 15% of the registered voters in the county and only about 12% of the people who cast ballots in the 2020 general election.

Table 1. Representation of Age-eligible Program Recipients Among Allegheny County Electorate in 2020.

2020 program	*N*	Number as percent of total Allegheny County CVAP	Number who were registered to vote as of 2020 GE, as percentage of total Allegheny County registrants as of 2020 GE	Number who voted in 2020 GE, as percentage of total Allegheny County voters in the election
Medicaid	181,156	19.0%	13.4%	11.0%
SNAP	112,693	11.8%	8.7%	6.9%
SSI	30,244	3.2%	2.2%	1.7%
Section 8	20,121	2.1%	1.7%	1.3%
Public housing	10,185	1.1%	0.8%	0.6%
TANF	7,771	0.8%	0.6%	0.4%
CCDF	6,615	0.7%	0.6%	0.5%
Total benefits recipients	**195,239**	**20.5%**	**14.5%**	**12.0%**

Notes: The total Allegheny County CVAP comes from American Community Survey Table S2901 2019 1-year estimates. The total number of Allegheny County registered voters as of the 2020 GE and the total number of County voters in the election come from https://results.enr.clarityelections.com/PA/Allegheny/106267/web.264614/#/summary?category=C_1.
GE = general election; CVAP = citizen voting-age population; SNAP = Supplemental Nutrition Assistance Program; SSI = Supplemental Security Income; TANF = Temporary Assistance to Needy Families; CCDF = Child Care and Development Fund.

People enrolled in these benefits programs register and vote at much lower rates than other county residents.

Put another way, there was a nearly forty-percentage-point gap in turnout between benefits recipients and other residents in the 2020 general election.[5] If people enrolled in the programs we study had registered and turned out to vote at the same rate as the rest of the county, Allegheny County would have seen more than 75,000 additional ballots cast in November 2020, roughly 10% of the county's actual observed vote total.

Who Receives Benefits?

Table 2 shows the demographic composition of Allegheny County's public benefits recipients and its overall citizen voting-age population (CVAP). The estimates in Table 2 suggest that benefits recipients are demographically different from the county population as a whole, and are drawn from groups that are more likely to support generous welfare programs. Individuals aged 18–29 are 20% of the Allegheny County CVAP, but 27% of its voting-eligible benefits recipients, while individuals aged 65 or older are 25% of the CVAP but only 15% of its voting-eligible benefits recipients. Benefits recipients are also disproportionately women, racial minorities,

Table 2. Comparison of Allegheny County Citizen Voting-age Population (CVAP) With Voting-age Public Benefits Recipients.

	Allegheny County CVAP	Voting-age public benefits recipients in 2020
Age composition		
18–29	20.0%	27.1%
30–64	56.0%	57.7%
65+	25.0%	15.2%
Gender composition		
Female	53.0%	57.3%
Race composition		
White alone	84.0%	56.2%
Black alone	12.0%	37.2%
Hispanic	2.0%	1.2%
Mean earnings in past year	$38,254	$6,885

Notes: The Allegheny County CVAP demographics data comes from ACS Table S2901 2019 1-year estimates. The Allegheny County CVAP data on wage and salary income in the past year comes from ACS PUMS 2019 1-year estimates data aggregated across all Allegheny County PUMAs.

and low-income: Women are 53% of the CVAP but 57% of the recipients, while Black residents compose 12% of the county CVAP but over one-third (37%) of benefits recipients. Similarly, and unsurprisingly given the means-tested nature of these programs, the mean twelve-month income for eligible voters in the county was over $38,000, while it was just under $7,000 among benefits recipients.

These figures depict a benefit-recipient population that, based on prior research on preferences for government spending among different subgroups of Americans, is likely to be supportive of generous welfare policy. Younger Americans are reliably more supportive of redistribution than older Americans, and younger Americans' support has only grown in recent years (Ashok, Kuziemko, and Washington 2015). Black Americans tend to be more supportive of generous welfare policy, on average, than white Americans are (Garand, Xu, and Davis 2017), women tend to be more supportive than men, and lower-income people tend to be more supportive than higher-income people (Pew Research Center 2011). These groups—younger people, Blacks, women, and the poor—are all disproportionately represented among Allegheny County's voting-eligible benefits recipients compared to their shares of the county's voting-age population.[6]

Discussion

Our analysis focuses on the representation of public benefits recipients among voters. The extent to which receipt of these public benefits *causes* gaps in political participation—either by encouraging or discouraging voting—is beyond the scope of this note. Theoretically, enrollment in benefits programs could shape participation in a number of ways. Public benefits receipt might increase resources for prospective voters in ways that facilitate voting (Corman, Dave, and Reichman 2017; Baicker and Finkelstein 2018) and/or mobilize voters seeking to maintain their benefits (Campbell 2012). Research on a Medicaid expansion lottery in Oregon finds that access to Medicaid increased voter turnout (Baicker and Finkelstein 2018). Additionally, or instead, experiences with public benefits may suppress participation by fostering a sense of cynicism about or exclusion from government institutions (Soss 2002; Bruch, Ferree, and Soss 2010). Housing benefits that induce residential mobility may also disrupt social and community ties, lowering turnout (Gay 2012). Moreover, the relationship between public benefits receipt and political participation may vary based on characteristics such as attention to politics (Sugie and Conner 2020) and the structure of the specific public benefit program (Campbell 2002, 2003; Soss 2002; Swartz et al. 2009; Bruch, Ferree, and Soss 2010; Mettler 2010). We do not seek to make claims about such causal effects; we begin by presenting

descriptive patterns across multiple benefits programs, which has been challenging to do with past data sources.

We find that people enrolled in means-tested public benefits programs in Allegheny County are less likely to register and vote than other residents. Are these relationships likely to hold outside of Allegheny County as well? While no single county in the U.S. would perfectly represent the nation, Allegheny County is reasonably representative of the nation as a whole on many relevant dimensions. Allegheny County is large: Despite being just one county, with 1.2 million residents it is more populous than eight states and the District of Columbia. Consequently, it contains both urban and rural areas, and a variety of different and differently-resourced agencies administer social programs there. Further, its benefits and eligibility rules are neither much more nor much less strict than rules elsewhere in the US; the Pennsylvania maximum TANF benefit level in July 2020 for a parent and two children was $421, slightly lower than the median benefit level ($489) across the 50 states and D.C. (Safawi and Floyd 2020). Finally, program recipients look, in many ways, similar to recipients in the nation as a whole (for example, 23.5 percent of the county receives Medicaid compared to 19.5 percent of the US). The county labor force participation rate, poverty rate, and median household income mirror national rates. The most prominent difference between Allegheny County and the entire U.S. is the county's racial composition and the racial structure of poverty there: Allegheny County is predominantly non-Hispanic White and non-Hispanic Black, with relatively few Hispanic/Latino residents, and Black residents compose a disproportionately large share of means-tested program enrollees. We encourage additional research in other demographic and policy contexts, such as areas with greater Hispanic/Latino populations, with different racial disparities in the experience of poverty, and states with higher and lower benefit levels (Michener 2019). Finally, Pennsylvania was a swing state in 2020, which helps to explain the very high overall levels of turnout seen in Allegheny County. To the extent that other places received less campaign attention and mobilization effort, it is possible that participation among benefits recipients could be even lower, and the gap between program enrollees and other residents even larger, elsewhere.

Benefits receipt and voting might also vary based on the extent of criminal legal system involvement in a particular area. Allegheny County's incarceration rate is somewhat lower than that of the U.S. as a whole, with 778 per 100,000 adults aged 15–64 incarcerated compared to 978 per 100,000 nationally in 2019 (Vera Institute of Justice 2023). This translates to approximately 9,500 individuals incarcerated in Allegheny County, absent from the ranks of eligible voters, and ineligible for most public benefits programs. People who have completed their sentences after a felony conviction are eligible to vote in

Pennsylvania, so a felony record alone should not exclude someone from voting as it would in some states. Pennsylvania also does not impose welfare bans or restrictions on those with felony records, except for those convicted of drug trafficking.[7] If anything, these contextual factors suggest that the negative association between benefits receipt and political participation might be even larger in jurisdictions where there are more formal restrictions on voting for those who have felony criminal records and/or higher rates of returnees from prison. It is less clear how to generalize these estimates to places with both felony disenfranchisement and welfare bans, where people ineligible to vote due to past convictions may also find themselves excluded from benefits.

These descriptive findings are important because the underrepresentation of benefits recipients among Allegheny County's voters likely yields an electorate with different political views than would be seen under participatory parity. National survey data finds means-tested benefits recipients are more likely to see the government as responsible for assisting those in need (Morin, Taylor, and Patten 2012). This may reflect the demographic composition of the population of benefits recipients—in Allegheny County, recipients are younger, less white, more female, poorer, and more Democratic than the county's voters as a whole, characteristics associated with more liberal policy preferences. Moreover, some research suggests that benefits receipt itself might induce greater support for public benefits.[8] Thus, preferences for generous welfare policy are likely under-represented among Allegheny County voters relative to eligible voters. In other words, in Allegheny County, the median voter is likely less supportive of generous welfare policy than the median voting-eligible individual.[9]

Beyond overall levels of support for welfare spending, the underrepresentation of benefits recipients could also translate into different incentives for politicians considering program design and implementation. The design and application of eligibility policies such as work requirements, income verification, and "recertification" requirements can make the difference between eligible families accessing these programs or being shut out of them (Herd and Moynihan 2019). People who directly interact with these programs understand the importance of such program details in ways that many other voters and politicians may not. Indeed, two recent studies, drawing on a nationally representative U.S. sample as well as a sample of Danish politicians, find that those with personal experience of the welfare system are more strongly opposed to placing administrative burdens on applicants (Baekgaard, Moynihan, and Thomsen 2021; Halling, Herd, and Moynihan 2022). The relative absence of program recipients in the electorate could mean that politicians are less likely to see program design and administrative burden as issues of concern for their constituents, potentially making them more attentive to other concerns (such as fears

of fraud) and less attentive to the hurdles faced by program applicants. Indeed, political science research finds some evidence that groups with high voter turnout rates have their policy preferences better represented than groups with lower voter turnout rates—especially when the group has homogeneous policy preferences, is loyal to a particular party, and/or is voting in a subnational election where smaller groups can sometimes be decisive (Hajnal and Trounstine 2005; Griffin and Newman 2013; Schlozman, Verba, and Brady 2013; Anzia 2019; Goldstein et al. 2021). Additional research would be helpful, though, to examine the specific implications of benefit recipient under-representation on policymakers' priorities.

By analyzing administrative data from one large and varied county, we have been able to describe the scale of turnout bias in a way that clearly illustrates the resulting political landscape. Our findings demonstrate that the life experiences, demographic characteristics, and likely policy preferences of participants in the political process differ from the experiences, demographics, and preferences of non-participants. We hope that these new descriptive findings will be generative for future research. Future causal research could exploit changes in benefits over time; for example, increased SNAP benefits due to the Covid-19 pandemic ended on March 1, 2023, and it should be possible to compare political participation before and after this change if pre-2023 participation trends are parallel (either in Allegheny County or elsewhere) among public benefits recipients and nonrecipients. Future qualitative research could use in-depth interviews with benefits program recipients, such as those carried out in Fong (2019), to generate data that helps adjudicate between competing hypotheses of whether program receipt is politically mobilizing or demobilizing. And studies of the effects of under-representation on policy outcomes could investigate whether informing representatives about benefits recipients' preferences changes representatives' positions (Pereira 2021). In short, these findings should spark further discussion of both the causes and the consequences of the underrepresentation we describe.

Acknowledgments

The authors thank Angelica Lee for research assistance, and Katy Collins, Jamila Michener, Kris-Stella Trump, and participants in the APSA Women's Mentoring Workshop for helpful comments on the project.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. We provide a replication package with de-identified data and code to reproduce all analyses presented here at: https://doi.org/10.7910/DVN/SQMHBG
2. TANF, SNAP, public housing, and Section 8 are conferred at the household level, so all household members are designated as benefit recipients; Medicaid and SSI are conferred at the individual level. For CCDF, household members of the recipient parent are listed as receiving this benefit if they are designated as caregivers for the recipient child.
3. Despite the unusual voting circumstances and public benefit needs caused by the coronavirus disease 2019 (COVID-19) pandemic in 2020, the voter turnout rates of public benefit recipients—and the relative turnout rates among recipients of different public programs—were not meaningfully different in 2020 than in 2016 or 2018, as shown in the Supplemental Online Appendix, Figure A2.
4. We calculate recipients' share of the county's voting-eligible population using Census Bureau estimates of the county's citizen voting-age population (CVAP).
5. We calculate non-benefits-recipient turnout by subtracting votes cast by program enrollees from the total number of votes cast in the county, and dividing the remaining votes by an estimate of nonrecipient citizen voting-age population (we subtracted our total number of benefits recipients from the county's estimated CVAP). We estimate a turnout rate of close to 85 percent among Allegheny County's non-benefits-enrolled residents in the hotly-contested 2020 general election.
6. In this main analysis, we focus on demographics that are arguably prior to political participation and political behavior. In the Supplemental Online Appendix, Table A3, we provide party registration information for benefits recipients and show that registered Democrats are also over-represented among benefits recipients.
7. Under a 2018 law, in order to receive TANF benefits, Pennsylvanians with drug trafficking convictions must comply with all court obligations, be actively involved in or have completed drug treatment, and comply with random drug tests for 10 years or the term of their probation, whichever is longer (Burnside and Thompson 2022).
8. Identifying a causal relationship between benefits receipt and policy preferences is difficult because of the possibility of endogeneity or reverse causality. Nevertheless, scholarship such as Campbell (2002) and Mettler and Soss (2004) convincingly show that recipients of public benefits support those benefits

and sometimes seek to preserve or expand them through political mobilization. Pierson (1994) shows how generous welfare state policies can be hard to roll back due to recipient loss aversion. One precise causal design comes from Lerman and McCabe (2017), who use a regression discontinuity design based on age cutoffs for eligibility for Medicare and Social Security to show that individuals who have experience with these policies due to having recently turned 65 are significantly more supportive of them than otherwise similar individuals who will shortly turn 65. Finally, Mettler (2011) finds that individuals who receive government benefits that are "visible" are more likely to report that their benefits receipt mattered for their vote choice. She shows that benefits marketed and distributed as government benefits, such as SNAP, are more politically salient than those hidden in tax credits or subsidized loan policies, such as the mortgage interest deduction. Since the benefits we examine here are highly visible, we suspect that they are important to at least some recipients' political attitudes.

9. Though we focus here on voting, this underrepresentation could be even more extreme when it comes to more-costly forms of participation like participation in government meetings or town halls, thus further skewing politicians' perception of the public's preferences (Einstein, Palmer, and Glick 2019).

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Online Appendix for "Political Underrepresentation Among Public Benefits Recipients: Evidence from Linked Administrative Data"

Contents

1 Data sources

1.1 Voter data

The voter datasets used in this study were obtained from the PA Department of State at https://www.pavoterservices.pa.gov/pages/purchasepafullvoterexport.aspx.

1.1.1 2020 general election

The 2020 general election turnout data come from two separate voter extracts. For 65 out of 67 PA counties, the 2020 turnout data come from files extracted on January 11, 2021. For Allegheny and Philadelphia Counties, the 2020 turnout data come from files extracted on February 8, 2021, because these two counties had not yet certified their 2020 election results as of January 11, 2021.

For context, Allegheny County has an estimated CVAP of 953,365[9], and had 942,849 registered voters as of the 2020 general election.[10] The fact that this number of registered voters is over 98% of the county's total CVAP suggests that some portion of registered voters may no longer live in Allegheny County, since voter registration rates in America tend to be lower than 98%. Managing and maintaining voter registration lists is a well-known challenge in election administration (Shaw, Ansolabehere, and Stewart III 2015; Kim, Schneider, and Alvarez 2020), and Pennsylvania in particular has been noted to have high rates of deceased or relocated voters' records on the file (Ansolabehere and Hersh 2010). Because of the possibility that some groups could be over-represented in these outdated voting records, we present all turnout estimates unconditional on registration (so as a share of estimated population, rather than as a share of registered voters). Allegheny County had 726,720 voters in the 2020 GE[11], representing 76% of the citizen voting-age population.

[9] ACS Table S2901 2019 1-year estimates

[10] https://results.enr.clarityelections.com/PA/Allegheny/106267/web.264614/#/summary?category=C_1

[11] https://results.enr.clarityelections.com/PA/Allegheny/106267/web.264614/#/summary?category=C_1

1.1.2 2018 general election

The 2018 general election turnout data come from two separate voter extracts. For 65 PA counties, the 2018 turnout data come from files extracted on December 24, 2018. For Luzerne and Jefferson Counties, the 2018 turnout data come from files extracted on February 11, 2019, because these two counties had not yet certified their 2018 election results as of December 24, 2018.

1.1.3 2016 general election

The 2016 general election turnout data come from two separate voter extracts. For 54 counties, the 2016 turnout data come from files extracted on December 26, 2016. For the remaining 13 counties, the 2016 turnout data come from files extracted on February 6, 2017, because these 13 counties had not yet certified their 2016 election results as of December 26, 2016.

1.2 Human services data

The human services data used in this study was obtained from the Allegheny County Department of Human Services (ACDHS), which in turn receives the data through intergovernmental data-sharing agreements with other local and state entities. Table A1 describes the sources and coverage of the data.

We provide a limited replication dataset for this project with deidentified records that allow for the reproduction of nearly all of the main paper's results. Out of concern for the privacy of people whose records are included in this dataset, we drop or coarsen fields that could be used to re-identify individual records, such as converting dates of birth to binned age values. For this same reason, we do not include annual income in dollars, preventing the exact replication of the final line of Table 2 from the paper. We have sought to strike a balance between ensuring research transparency and reproducibility while limiting the risk of individual people being re-identified and having private, sometimes-stigmatized

information about benefits receipt revealed. Researchers who are interested in accessing Allegheny County DHS data for their own projects should visit the Allegheny Analytics website (https://www.alleghenycountyanalytics.us/index.php/requesting-data/) or contact DHS-Research@alleghenycounty.us.

Table A1: Description of human services data sources and coverage

Program	Source	Population covered
Child Care and Development Fund (CCDF)	PA Region 5 Early Learning Resource Center, the entity that administers CCDF in Allegheny County. CCDF in PA is called Child Care Works.	All families receiving CCDF subsidies in Allegheny County
Medicaid	Comes from two separate sources: 1) PA Department of Human Services, the agency that administers Medicaid in PA, and 2) Allegheny HealthChoices Inc., a Medicaid consulting firm for behavioral health managed care in Allegheny County	Covers nearly all recipients in Allegheny County, as well as some recipients in other counties.
Public housing	Data comes from two of the three housing authorities that operate in Allegheny County: the Housing Authority of the City of Pittsburgh, which operates public housing in Pittsburgh, and the Allegheny County Housing Authority, which operates public housing in the rest of Allegheny County outside of Pittsburgh and McKeesport.	Covers all public housing tenants in Allegheny County except for the city of McKeesport.
Section 8 housing	Data comes from two of the three housing authorities that operate in Allegheny County: the Housing Authority of the City of Pittsburgh, which administers Section 8 in Pittsburgh, and the Allegheny County Housing Authority, which administers Section 8 in the rest of Allegheny County outside of Pittsburgh and McKeesport.	Covers all voucher and property-based Section 8 tenants in Allegheny County except for the city of McKeesport.
Supplemental Nutrition Assistance Program (SNAP)	PA Department of Human Services, the agency that administers SNAP in PA	Covers nearly all recipients in Allegheny County, as well as some recipients in other counties.

Supplemental Security Income (SSI)	PA Department of Human Services, which has enrollment data for this federally-administered program because it provides recipients with an additional payment to supplement the federal payment	Covers nearly all recipients in Allegheny County, as well as some recipients in other counties.
Temporary Assistance for Needy Families (TANF)	PA Department of Human Services, the agency that administers TANF in PA	Covers nearly all recipients in Allegheny County, as well as some recipients in other counties.

1.2.1 Human services program data coverage of Allegheny County

Some of the program data sources used in this study do not cover all recipients of the program in Allegheny County. The CCDF data covers all recipients in the county. The public housing and Section 8 program data covers all recipients except for those in the small Allegheny County city of McKeesport. The city of McKeesport contains 12.5% of the public housing units in Allegheny County, and 4% of the county's voucher and property-based Section 8 units.[12]

The Medicaid, SNAP, TANF, and SSI data do not necessarily include all recipients in Allegheny County. This is due to how the Allegheny County Department of Human Services (ACDHS) obtains the data. ACHDS maintains a "data warehouse" with centralized records for people who have interacted with local government in a variety of ways: enrollment in public benefits programs, enrollment in public schools, local court appearances and traffic tickets, coronavirus tests during the COVID-19 pandemic, birth certificate issuances, etc. This data warehouse is a central clearinghouse of local program enrollment records, and also serves as the basis for data requests to the state.

ACDHS receives the Medicaid, SNAP, TANF, and SSI data through a monthly exchange with the Pennsylvania Department of Human Services (PADHS). In this exchange, ACDHS sends PADHS a list of every individual who has ever appeared in the ACDHS data warehouse with a valid social security number. PADHS matches this list against its public benefits records by SSN and returns any matches to ACDHS. The inputted list of individuals does not contain every Allegheny County resident. Therefore the matched public benefits data does not necessarily cover the entire county population.

There are three factors that have expanded this data's coverage of the Allegheny County population over time. The first is that prior to February 2018, ACDHS did not include the complete data warehouse universe of individuals in each input file. It only included

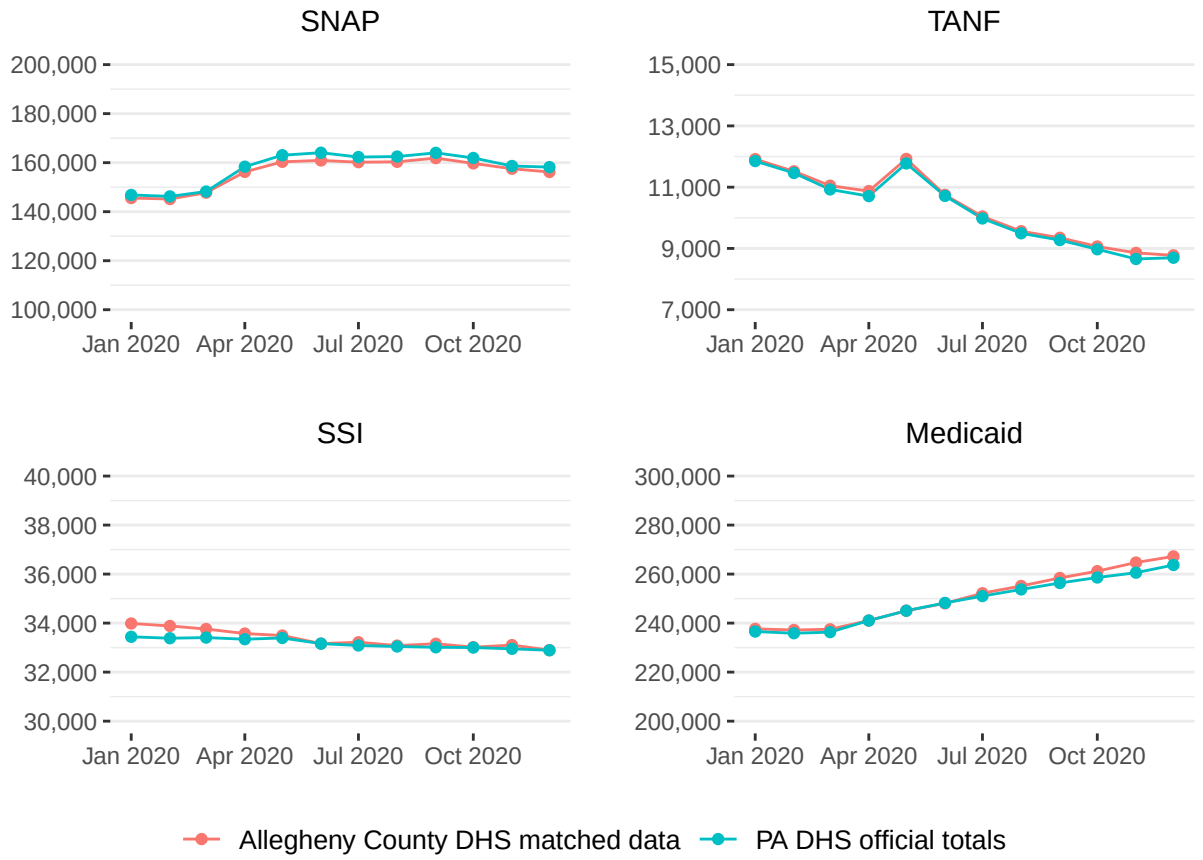
[12]Calculated based on data from the U.S. Department of Housing and Urban Development *Picture of Subsidized Households* 2020 dataset

individuals who had service activity within the past 12 months. As of February 2018, ACDHS began including all historical data warehouse individuals in each monthly input file. This greatly expanded the number of individuals that are submitted for match against PADHS records each month. The second factor is that starting in January 2020, PADHS began returning an expanded set of match data to ACDHS that includes all household members of the inputted individuals, even if the household member was not present in the input list. The third factor is that the scope of ACDHS's data warehouse has grown in recent years to cover an increasingly large proportion of Allegheny County residents. This has given ACDHS a larger pool of individuals to submit in its public benefits input files, and leads us to believe coverage in 2020 should be nearly complete.

Figure A1 compares the number of Allegheny County public benefits recipients per month in 2020 according to the official PADHS count with the number that is derived from ACDHS matched data. The counts derived from the ACDHS matched data track closely with the official PADHS totals.[13] From this comparison we conclude that ACDHS public benefits data is capturing nearly all recipients of these programs in Allegheny County.

[13]In fact, in some months, the counts derived from the matched data are slightly *greater* than the official totals. A knowledgeable PADHS staff member was not surprised by these discrepancies. They explained that the official monthly counts often cannot be reproduced exactly because they are a snapshot from a living system that is constantly making retrospective changes to recipients' dates of eligibility.

Figure A1: Official 2020 Medicaid, SNAP, TANF, and SSI recipient counts compared with counts derived from ACDHS matched data



The Medicaid data in particular is likely capturing very close to 100% of all county recipients. That is because ACDHS receives a separate monthly Medicaid enrollment data feed from a local managed care consulting firm. This separate feed is not based on a match with an inputted list of individuals. It contains every Allegheny County resident who is enrolled in managed care Medicaid. Monthly enrollment counts from this data source in 2020 show that approximately 95% of all Medicaid recipients in Allegheny County are enrolled in managed care. ACDHS then includes all of these managed care Medicaid recipients in the input file for the PADHS public benefits data match. Thus the managed care Medicaid feed's coverage of nearly the entire Allegheny County Medicaid population helps to ensure that the list of individuals that ACPADHS submits to PADHS captures most recipients of other public benefits in the county, since most recipients of TANF, SNAP, and SSI also

receive Medicaid.

Based on this process for obtaining the data, what type of Allegheny County SNAP, TANF, or SSI recipient could theoretically be missing from the 2020 matched data? They would be recipients who: 1) are not also receiving Medicaid, and 2) have no other household members receiving Medicaid, SNAP, TANF, or SSI, and 3) have never appeared in the ACDHS data warehouse with a valid SSN, meaning they have never been involved with any of the myriad public services that generate an SSN record in the data warehouse. It is unclear whether such recipients of SNAP, TANF, or SSI would tend to be more or less socioeconomically disadvantaged than the recipients of those benefits that are included in this study. Considering the overlapping nature of the data sources and how the data are obtained, we anticipate very few Allegheny County public benefits recipients missing from our data, and expect that missing recipients are likely similar to non-recipients in terms of socioeconomic status and voting behavior.

1.2.2 Noncitizens in ACDHS data

As stated in the main text, our analysis focuses on voting-age people receiving various means-tested benefits. The ACDHS datasets used do not consistently include citizenship information, and it is possible for certain non-citizens to qualify for many of the programs we study. As such, it is possible that the presence of non-citizens in the data could lead us to slightly understate participation among eligible voters receiving benefits, since we would be including people who are not actually eligible to vote in the denominator of the voter-turnout calculation. However, Allegheny County has relatively few non-citizen residents: 2019 estimates from the Census' American Community Survey put their share of the county's population at 3%. Thus, we think it is unlikely that the inclusion of some non-citizens in our data could drive the patterns presented in the paper, even if we were to assume they were over- or under-represented among benefits recipients.

2 Merging voter data with ACDHS data

2.1 Matching method

We merge the PA voter files with the ACDHS data warehouse using the same approach that ACDHS uses to match all individuals in the data warehouse. We first conduct a series of data quality checks on each voter record to identify any invalid values of name or birth date, such as names with numeric values or birth dates of "Unknown". Invalid names and birth dates are excluded from subsequent matching steps. Then the voter records are matched to existing ACDHS client records based on first name, last name, and date of birth.[14] Records are given the highest priority match if they match exactly on first name, last name, and date of birth. They are given the next highest priority match if they are a soundex match on first and last name and an exact match on date of birth.[15] Records that do not at least match on soundex or exact name and on exact birth date are not considered a match. If a voter record matches to more than one ACDHS client on exact name and birth date, they are matched to the client that appears in the greatest number of source data systems in the data warehouse. If all candidate matches appear in an equal number of source data systems, then the voter is not matched to any of them.[16]

[14]The data warehouse matching algorithm also utilizes social security numbers when available, but these numbers are not present in the voter files.

[15]The soundex name match is implemented using the SQL *SOUNDEX* function, which enables us to match words that sound alike, but are spelled differently. For example, the last names "Smith" and "Smythe" have the same Soundex code and thus could capture match cases in which one name was mistranscribed in DHS records. See https://docs.oracle.com/cd/B19306_01/server.102/b14200/functions148.htm

[16]The ACDHS data warehouse operates such that once an initial match is made, the client record remains associated with peer records from other data sources that point to the same individual. The data warehouse matching algorithm uses a weekly process that re-examines these associations, and allows them to change over time when additional data become available. This approach creates improved data quality over time, and removes the need to lock "bad matches" in place after new information becomes known. This dynamic, ongoing matching process provides for superior matching of clients across sources compared with static matching algorithms. To learn more about the ACDHS data warehouse, please visit https://www.alleghenycounty.us/Human-Services/News-Events/Accomplishments/DHS-Data-Warehouse.aspx.

2.2 Estimating rates of false positive and false negative matches

In linking the public benefits records to the state's voter file, we face concerns about both false positives (wrongly matching people to a voter record that is not them) and false negatives (failing to match people to the voter file even though they are actually registered). Either type of error could bias the estimates we present: false positive matches to the wrong voters could lead us to overstate registration and turnout among the population studied, and false negatives could lead us to understate participation. As such, we run a number of checks to validate the merge process.

To estimate the rate of false positive matches, we use an approach similar to Meredith and Morse 2015 by permuting the dates of birth in the voter file. We added plus or minus 35 days to the birth dates of all the unique registered voters across seven PA voter file extracts (N = 10,783,935). We then matched these voter records with permuted birth dates against the ACDHS data warehouse. The intuition for this test is that permuting the birthdates should yield records (name/DOB combinations) that in most cases will not belong to real people, so the matches we find should be false matches. If we find a high rate of matches for this permuted dataset, we should worry that our main merge approach is subject to many false positive matches. In this dataset, the +35 day birth dates yielded 13,378 matches, which represents just 0.4% of the 3,655,599 total unique individuals in the ACDHS data warehouse. The -35 day birth dates yielded 13,445 matches. This suggests that our voter matching method has a very low rate of false positive matches.

We estimate the rate of false negatives (missed matches) using three separate validation checks:

1. We identified 68 local elected officials who currently exist in the ACDHS data warehouse and were still present in the warehouse at the time the voter match was conducted. We assume that these elected officials are registered to vote in PA, by virtue of holding political office. Their record in the DHS data warehouse should therefore match with our most recent PA voter file. All 68 elected officials matched with the

voter file.

2. We identified 107 Allegheny County government employees who volunteered as polling place coordinators for the 2020 general election and who are present in the ACDHS data warehouse. These volunteers are required to be registered to vote according to Allegheny County policy. Among the 107 volunteers, 106 matched with the voter file. A follow-up manual search of the voter file found that the one non-matching volunteer was legitimately absent from the data (they could not be found on the voter file via manual inspection).

3. We identified 1,665 registered Allegheny County voters whose home address in the voter file corresponds to a public housing unit that is owned by either the Pittsburgh Housing Authority or the Allegheny County Housing Authority. This list allows us to check match completeness from the opposite direction. The ACDHS data warehouse receives tenant information from both of these housing authorities on a regular basis, so anyone living in these public housing units should show up in the data warehouse. Therefore, the voter records for these individuals should match with the data warehouse records. Indeed, all 1,665 of these registered voters matched with the data warehouse.

The results of these three validations suggest that our voter matching method has a very low rate of false negative (missed) matches.

3 Comparing benefits recipients in Allegheny County and the U.S.

Table A2 compares public benefits recipients in Allegheny County with those from across the United States, providing context to assess how the results in this note might generalize to the nation as a whole. Program receipt rates do not exactly align with the

numbers reported in the main paper because for comparability to national data we focus on all 2020 recipients (not only pre-election enrollees of voting age) in this table.

Table A2: Comparison of Allegheny County and United States public benefits populations

		Allegheny County			United States		
		N	% of total recipients	% of population subgroup	N	% of total recipients	% of population subgroup
Medicaid[a]							
Gender	Male	131,991	46.2%	21.0%	29,385,424	45.9%	18.2%
	Female	153,956	53.8%	26.2%	34,691,748	54.2%	20.8%
Race	White	159,129	55.6%	15.9%	42,332,732	66.2%	17.9%
	Black	112,191	39.2%	62.6%	15,331,277	24.0%	36.5%
	Asian	12,223	4.3%	21.1%	3,680,105	5.8%	19.7%
	Native American	748	0.3%	10.7%	1,785,852	2.8%	62.7%
	Hispanic	5,157	1.8%	18.7%	18,173,378	28.4%	30.9%
Age group	0 to 18	105,827	37.0%	43.7%	29,101,514	45.5%	37.6%
	19 to 64	156,480	54.7%	21.2%	27,752,633	43.4%	14.1%
	65 and over	23,643	8.3%	10.1%	7,223,025	11.3%	13.4%
Total	**Total**	**285,950**	**100.0%**	**23.5%**	**63,977,894**	**100.0%**	**19.5%**
SNAP[b]							
Gender	Male	85,356	43.3%	14.5%	15,813,000	42.5%	9.8%
	Female	111,798	56.7%	17.8%	21,389,000	57.5%	12.8%
Race	White, non-Hispanic	93,523	47.4%	9.9%	13,596,000	36.5%	6.9%
	Black, non-Hispanic	92,850	47.1%	59.6%	9,611,000	25.8%	23.7%
	Asian, non-Hispanic	6,867	3.5%	14.7%	1,221,000	3.3%	6.6%
	Native American, non-Hispanic	425	0.2%	32.4%	542,000	1.5%	24.2%
	Hispanic	2,657	1.3%	9.6%	5,947,000	16.0%	9.8%
Age group	0 to 17	67,757	34.4%	30.0%	15,871,000	42.7%	21.8%
	18 to 59	98,960	50.2%	14.9%	15,531,000	41.7%	8.6%
	60 and over	30,438	15.4%	9.4%	5,800,000	15.6%	7.7%
Total	**Total**	**197,155**	**100.0%**	**16.2%**	**37,202,000**	**100.0%**	**11.3%**
TANF[c]							
Gender	Male	7,720	36.8%	1.3%	879,637	42.3%	0.5%
	Female	13,256	63.2%	2.1%	1,198,509	57.7%	0.7%
	White	5,497	26.2%	0.6%	554,865	26.7%	0.2%

Table A2: Comparison of Allegheny County and United States public benefits populations *(continued)*

		Allegheny County			United States		
		N	% of total recipients	% of population subgroup	N	% of total recipients	% of population subgroup
Race	Black	14,753	70.3%	8.2%	602,662	29.0%	1.3%
	Asian	507	2.4%	0.9%	39,485	1.9%	0.2%
	Native American	51	0.2%	0.7%	31,172	1.5%	0.6%
	Hispanic	296	1.4%	1.1%	741,898	35.7%	1.2%
Age group	0 to 18	13,487	64.3%	5.9%	1,639,164	78.9%	2.2%
	19 to 49	6,947	33.1%	1.4%	418,535	20.1%	0.3%
	50 and over	542	2.6%	0.1%	19,243	0.9%	¡0.1%
Total	**Total**	**20,976**	**100.0%**	**1.7%**	**2,078,146**	**100.0%**	**0.6%**
SSI[d]							
Gender	Male	18,128	49.6%	3.1%	3,852,666	47.7%	2.4%
	Female	18,437	50.4%	2.9%	4,224,201	52.3%	2.5%
Race	White, non-Hispanic	17,190	47.0%	1.8%	3,257,000	40.3%	1.7%
	Black	17,512	47.9%	9.8%	1,780,000	22.0%	3.9%
	Asian	1,547	4.2%	2.7%	466,000	5.8%	2.2%
	Hispanic	246	0.7%	0.9%	1,454,000	18.0%	2.5%
Age group	0 to 29	11,025	30.2%	2.6%	2,067,678	25.6%	1.6%
	30 to 64	18,830	51.5%	3.4%	3,715,359	46.0%	2.5%
	65 and over	6,710	18.4%	2.8%	2,293,830	28.4%	4.2%
Total	**Total**	**36,565**	**100.0%**	**3.0%**	**8,076,867**	**100.0%**	**2.5%**
Section 8[e]							
Gender	Female head of household	11,540	82.7%	6.9%	2,673,511	75.6%	7.9%
Race	White non-Hispanic	3,182	22.8%	0.7%	1,183,663	33.5%	1.4%
	Black non-Hispanic	10,479	75.1%	16.7%	1,526,576	43.2%	10.0%
	Asian or Pacific Islander, non-Hispanic	41	0.3%	0.2%	130,609	3.7%	2.1%
	Native American non-Hispanic	51	0.4%	7.1%	35,375	1.0%	4.5%
	Hispanic	197	1.4%	2.5%	612,255	17.3%	3.7%
	Under 25	333	2.4%	1.1%	119,720	3.4%	2.2%
	25 to 61	10,879	77.9%	3.6%	2,134,769	60.3%	2.8%

Table A2: Comparison of Allegheny County and United States public benefits populations *(continued)*

		Allegheny County			United States		
		N	% of total recipients	% of population subgroup	N	% of total recipients	% of population subgroup
Age group	62 and over	2,745	19.7%	1.4%	1,295,203	36.6%	3.1%
Total	**Total**	**13,957**	**100.0%**	**2.6%**	**3,537,450**	**100.0%**	**2.9%**
Public housing[f]							
Gender	Female head of household	5,415	72.0%	3.2%	651,307	74.0%	1.9%
Race	White, non-Hispanic	1,965	26.1%	0.5%	246,441	28.0%	0.3%
	Black, non-Hispanic	5,362	71.3%	8.6%	378,462	43.0%	2.5%
	Asian or Pacific Islander, non-Hispanic	56	0.7%	0.3%	26,404	3.0%	0.4%
	Native American, non-Hispanic	10	0.1%	1.4%	8,801	1.0%	1.1%
	Hispanic	125	1.7%	1.6%	220,036	25.0%	1.3%
Age group	Under 25	367	4.9%	1.2%	44,007	5.0%	0.8%
	25 to 61	4,063	54.0%	1.4%	536,888	61.0%	0.7%
	62 and over	3,093	41.1%	1.6%	308,051	35.0%	0.7%
Total	**Total**	**7,523**	**100.0%**	**1.4%**	**880,145**	**100.0%**	**0.7%**
CCDF[g]							
Race	White	2,905	24.8%	2.4%	541,610	41.0%	1.4%
	Black	8,451	72.2%	21.3%	528,400	40.0%	5.8%
	Asian	123	1.1%	1.2%	13,210	1.0%	0.4%
	Native American	35	0.3%	20.6%	13,210	1.0%	1.2%
	Hispanic	240	2.1%	4.1%	317,040	24.0%	2.4%
Age group	0 to 2	3,447	29.4%	8.9%	369,880	28.0%	3.3%
	3 to 5	3,983	34.0%	10.4%	501,980	38.0%	4.2%
	6 to 12	4,277	36.5%	5.1%	449,140	34.0%	1.6%
Total	**Total**	**11,707**	**100.0%**	**7.3%**	**1,321,000**	**100.0%**	**2.5%**

Table A2: Comparison of Allegheny County and United States public benefits populations *(continued)*

	Allegheny County			United States		
	N	% of total recipients	% of population subgroup	N	% of total recipients	% of population subgroup

Notes:
The Allegheny County and U.S. data presented are not exactly comparable for two reasons. First, the Allegheny County data cover 2020, while the U.S. data cover the most recent time period publicly available, generally either 2019 or 2020. Second, the Allegheny County data include everyone who received benefits at any point during the year, while the U.S. data for some programs reflect point-in-time counts or estimates based on samples from the full population. Racial categorizations vary across programs and do not sum to 100% within programs because they are not mutually exclusive.

[a] U.S. Medicaid counts are based on data from ACS 2019 1-year estimates Tables S2704 and S27007

[b] U.S. SNAP counts are based on data from Cronquist (2021)

[c] U.S. TANF counts are based on data from U.S. Department of Health & Human Services, Administration for Children & Families, Office of Family Assistance (2020)

[d] U.S. SSI counts are based on data from Social Security Administration (2020) and the Survey of Income and Program Participation (SIPP)

[e] U.S. Section 8 counts are based on the U.S. Department of Housing and Urban Development Picture of Subsidized Households 2020 data set. Counts are numbers of households, not individuals.

[f] U.S. Section 8 counts are based on the U.S. Department of Housing and Urban Development Picture of Subsidized Households 2020 data set. Counts are numbers of households, not individuals.

[g] U.S. CCDF counts are based on data from U.S. Department of Health & Human Services, Administration for Children & Families, Office of Child Care (2019). Disaggregations of U.S. CCDF recipients by gender are not publicly available. Recipient counts and the corresponding population denominators are limited to children ages 0 to 12, since this is the range of age eligibility for CCDF.

4 Supplementary tables and figures

Table A3 examines the political party breakdown among public benefits recipients who were registered to vote as of the 2020 general election. For context, the table also includes the party breakdown of all Allegheny County residents who were registered to vote as of the 2020 election.

Table A3: Party registration as of the 2020 general election among Allegheny County public benefits recipients and all county residents

2020 program	N	% Democrat	% Republican	% Other/No Party
Medicaid	127,143	66.8%	17.0%	16.2%
SNAP	81,980	70.6%	14.4%	15.0%
SSI	20,740	74.4%	13.0%	12.6%
Section 8	15,638	81.3%	6.0%	12.6%
Public housing	7,800	80.5%	7.5%	12.0%
TANF	5,799	74.1%	7.9%	18.0%
CCDF	5,508	76.9%	7.8%	15.3%
Total benefits recipients	**137,481**	**67.4%**	**16.7%**	**15.9%**
Allegheny County residents	**942,330**	**57.2%**	**28.4%**	**14.3%**

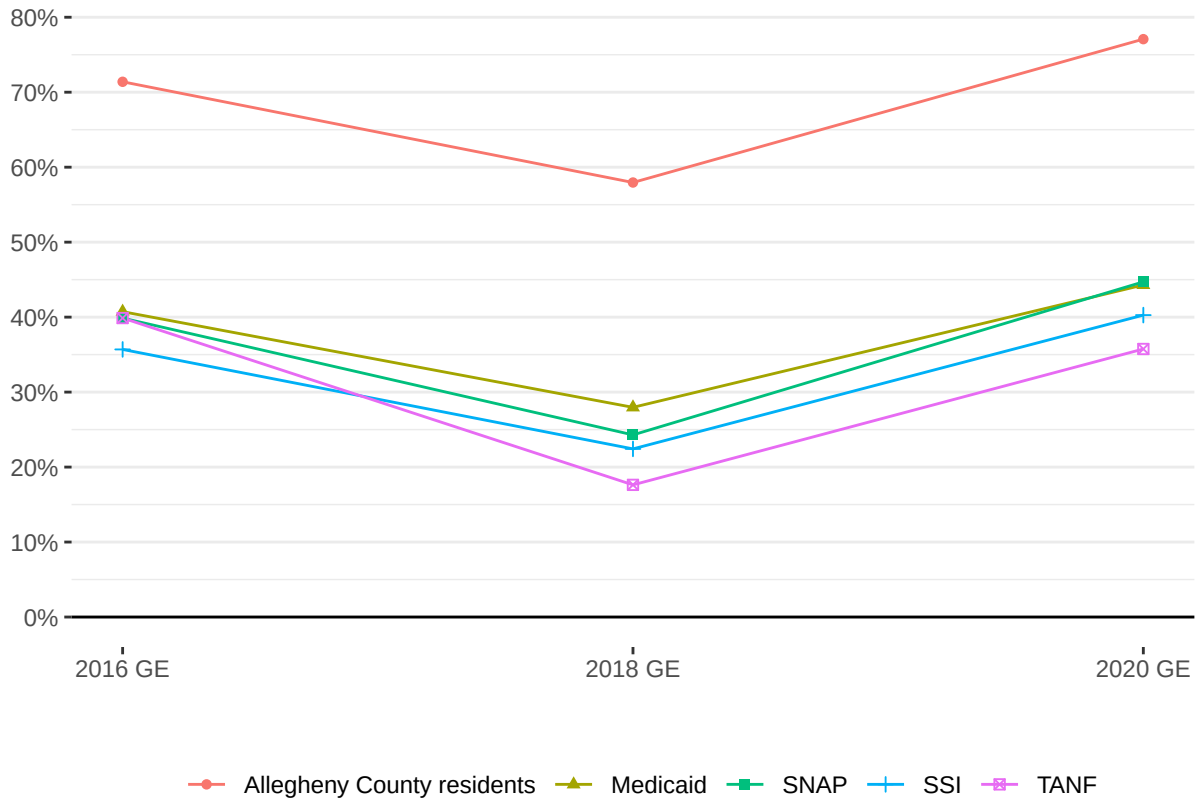
Notes: Benefits recipients counts are limited to individuals who received benefits prior to November 2020

Figure A2 presents the turnout rates for the 2016, 2018, and 2020 general elections among various program groups and for all Allegheny County residents.[17] We focus on the 2020 general election in the main text because the public benefits data used to calculate 2016 and 2018 turnout rates contain some recipients who do not live in Allegheny County. Recall that ACDHS obtains public benefits data from the state by submitting a list for match that contains every individual who has ever appeared in the ACDHS data warehouse with a valid SSN, regardless of when they were added to the data warehouse. Some of these individuals no longer live in Allegheny County at the time of the data match. Prior to January 2020, the public benefits data used in this analysis did not indicate each recipient's county of residence. Therefore, we were unable to exclude non-Allegheny County public benefits recipients from the 2016 and 2018 turnout calculations. Nevertheless, Figure A2 suggests that our findings are not specific to the 2020 general election. Using the best data that we have for 2016 and 2018, we find that benefits recipients still voted at much lower

[17]The countywide turnout rates are calculated using data from the Allegheny County Elections Division, available at https://www.alleghenycounty.us/elections/election-results.aspx

rates than Allegheny County residents in these elections.

Figure A2: Turnout in recent elections among public benefits recipients and all Allegheny County residents



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