



RESEARCH REPORT

How Work-Limiting Health Shocks Affect Employment and Income

Stipica Mudrazija

Jack Smalligan

August 2019



ABOUT THE URBAN INSTITUTE

The nonprofit Urban Institute is a leading research organization dedicated to developing evidence-based insights that improve people's lives and strengthen communities. For 50 years, Urban has been the trusted source for rigorous analysis of complex social and economic issues; strategic advice to policymakers, philanthropists, and practitioners; and new, promising ideas that expand opportunities for all. Our work inspires effective decisions that advance fairness and enhance the well-being of people and places.

Contents

Acknowledgments	iv
How Work-Limiting Health Shocks Affect Employment and Income	1
Data and Methods	2
Results	4
Descriptive Analysis	4
Inferential Analysis	23
Discussion	28
Appendix: Additional Tables	33
Notes	45
References	47
About the Authors	49
Statement of Independence	50

Acknowledgments

This report was funded by Arnold Ventures. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

The authors appreciate the helpful suggestions of Chantel Boyens and Jon Schwabish. Thanks also to Michael Marazzi and Archana Pyati, Urban Institute colleagues who provided editorial and dissemination support for this report.

How Work-Limiting Health Shocks Affect Employment and Income

Researchers and policymakers have been increasingly focusing on working-age disability because of its potentially deleterious effects on individual and family well-being as well as the harm it can exert on the economy through its impact on labor force participation. To date, research has established that a nontrivial segment of the workforce can expect to suffer from a disability that can impede work. As of 2017, over 20 million adults ages 18 to 64 in the US, or 10.3 percent of the age group, had any type of disability, and the employment rate for people with a disability in this group is less than half of that for their nondisabled peers (Lauer and Houtenville 2019). Disability prevalence also increases with age, which can make older workers particularly susceptible to the negative work-related impacts of disability. Cutler, Meara, and Richards-Shubik (2011) find that about 8.1 percent of adults ages 50 to 62 (including 6.6 percent of those who were employed full time) experienced a new major health shock (such as heart disease, lung disease, cancer, or stroke) over a two-year period between 1994 and 2008; 12.7 percent of these adults (including 12.2 percent of those employed full time) had a new minor health shock (such as arthritis, hypertension, or diabetes). Hyde and Wu (2019) established that older workers who suffered from a persistent work-limiting health condition are substantially more likely than their peers without any limitation to stop working, with the difference ranging from less than 17 percentage points at age 59 to 30 percentage points at 67. Although older workers with a disability are especially likely to stop working, disabled workers regardless of age are more likely to leave the labor force as well as to experience other types of labor force transitions, such as reducing their hours of work or changing jobs (Burkhauser and Daly 1996; Hyde and Wu 2019; Meyer and Mok 2013a).

Labor force transitions following the onset of disability, especially accelerated labor force exit, have been linked with negative impacts on earnings and income and with the resulting increase in the economic vulnerability of adults with disabilities. Meyer and Mok (2013a) find that 10 years after the onset of disability, earnings of men with chronic and severe disabilities decline on average 79 percent and after-tax income declines an average of 35 percent. Women with chronic and severe disabilities face a more moderate decline in earnings, especially in after-tax income (Meyer and Mok 2018). Further, qualifying criteria for the receipt of Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) could disincentivize some applicants for these benefits from continuing to work because doing so might diminish their chances of receiving SSDI or SSI (Autor and Duggan 2003).

Regardless of the channel through which disability affects the economic position of workers who are faced with a work-limiting disability, robust evidence links a rise in economic vulnerability and material hardship with the onset of disability. For example, Jolly (2013) finds that a work-limiting

disability is linked with downward mobility in earnings and income and that the likelihood of remaining at the lower end of the income distribution remains elevated for at least 10 years following the disability onset. Although the impact on income mobility is substantially smaller than the impact on earnings mobility (presumably because of the protective role of spousal earnings and government transfers as Jolly's research suggests), poverty rates increase substantially for working-age adults with a new disability and remain elevated even in the long run. This is particularly true for people with a chronic or severe condition, who are about 50 percent more likely to be poor after the disability onset, even after accounting for public transfers (Meyer and Mok 2013b). Consistent with their higher poverty rates, workers with disabilities also experience substantial and persistent declines in food and housing consumption (Meyer and Mok 2013a, 2018).

Research suggests that earnings losses are overwhelmingly attributable to people with a newly disabling condition who stop working altogether (Hyde and Wu 2019). This implies that absent public transfers or other sources of income (such as disability or retirement benefits that could at least partly make up for the lost earnings), these people may be particularly likely to find themselves in a financially precarious situation. Indeed, regardless of their economic position at the time of disability onset, people who stop working and do not retire or receive any public transfers could experience substantial long-term deterioration in their economic well-being. With this in mind, we explore this subset of workers with serious new health conditions, document their characteristics, and contrast their economic well-being in the short- and medium-term with that of their peers who continue working, retire, or stop working and receive public transfers.

Data and Methods

Data for this study come from the 2005–15 waves of the Panel Study of Income Dynamics. The Panel Study of Income Dynamics is a nationally representative household survey with rich information on the demographic, socioeconomic, health and other characteristics of survey respondents and their families. Key for our analysis, it has detailed labor force status information over time, information on various health issues that can potentially interfere with the respondents' ability to work, and information on receipt of different types of public transfers. Alongside other relevant data collected by the Panel Study of Income Dynamics, this information allows us to examine the links between the onset of health issues and labor force transitions as well as possible impacts of public transfers, or the lack thereof, on the economic security of workers who exit from the labor force after experiencing a new health issue.

The analytic sample for this study is 42,722 adults ages 18 to 62 who were in the labor force in the baseline years (2005 to 2013) and follows their labor force status in subsequent waves of the survey (2007 to 2015). Of them, 1,970 report a new work-limiting health condition¹ and 1,782 report

experiencing a new major health shock,² and these individuals are the subsamples used for the analyses focused on experiencing a new health issue.³ The subsample of adults ages 18 to 62 who worked full time at baseline has 32,865 observations, and the corresponding subsamples of full-time workers who report a new work-limiting health condition or major health shock include 1,356 and 1,285 observations, respectively.⁴

We begin with a descriptive analysis of the differences in labor force transitions and economic well-being between workers who experience new health issues and those who face no such challenge. We present an inferential analysis of the link between labor force transitions and various types of new health issues over time (two, four, and six years following the baseline) for the sample of adults who are in the labor force at baseline and their subsample working full time at the baseline. For the sample of adults in the labor force, we fit a pooled multinomial logistic regression with the following possible outcomes: (1) in the labor force; (2) retired; (3) out of labor force and receiving some public cash transfer (including SSDI, SSI, Temporary Assistance for Needy Families, Veterans Affairs benefits, and other welfare);⁵ and (4) out of labor force and not receiving any public cash transfer. For the sample restricted only to those who work full time at baseline, labor force status outcomes include (1) employed full time; (2) employed part time; (3) unemployed; (4) retired; (5) out of labor force and receiving some public cash transfer; and (6) out of labor force and not receiving any public cash transfer. Models control for age (in years), sex, race and ethnicity (non-Hispanic white, non-Hispanic black, and other), presence of a spouse or partner, size of family network (total count of household members age 18 and older other than spouses or partners and any living siblings), years of education, fair or poor self-rated health, any overnight stay in a hospital, inverse-hyperbolic-sign-transformed⁶ (IHS) out-of-pocket health expenditures, IHS per capita family income,⁷ occupation (professional, service, and blue-collar jobs), industry (tertiary sector), job characteristics (whether the use of a computer at work is required all or most of the time and whether the respondent's current job offers a pension), residence in an urban area, and survey period. We repeat the analysis conditional on experiencing a new work-limiting health condition to examine what personal characteristics of workers who face a new health issue are related with different types of labor force transitions, particularly with dropping out of labor force without either retiring or receiving any public support.

We use another set of models to examine the association of economic vulnerability with various types of labor force transitions following the onset of work-limiting health conditions. We focus on three outcomes of interest: the likelihood of the respondent's income falling below 100 percent of the federal poverty level at the next wave, the IHS value of the respondent's income at next wave, and the change in the respondent's income quartile position between waves. To explore these outcomes, we fit a series of panel-data models, including the population-averaged logistic regression of falling below the federal poverty level, the population-averaged linear regression of the income level, and the ordered

logistic model of change in the income distribution. Models of economic vulnerability include a similar set of sociodemographic, economic, and health control variables as used in the models of labor force transition.

Results

Descriptive Analysis

Based on the pooled biennial data from the 2005–15 waves of the Panel Study of Income Dynamics, on average about 4.8 percent of adults ages 18 to 62 who are in the labor force (and 4.3 percent of adults who are employed full time) suffer from a new work-limiting health condition between survey waves, suggesting that about 2.4 percent of adults (and 2.1 percent of those employed full time) may experience a new work-limiting health condition each year (table 1). Similarly, about 2.2 percent of adults in the labor force experience a new major health shock each year,⁸ and about 3.9 percent suffer from a new minor health shock. Furthermore, on average, about 4.6 percent of adults in the labor force reported missing work because of their own illness between 2004 and 2014 (that is, in the years preceding the interview years). Except for minor health shocks, women are more likely than men to report experiencing new health issues.

TABLE 1
Prevalence of New Health Conditions, 2005–15

	All	Men	Women
Work-limiting health condition			
In labor force	4.8	4.4	5.3
Working full time	4.3	4.0	4.7
Major health shock			
In labor force	4.4	4.2	4.6
Working full time	4.2	4.0	4.5
Minor health shock			
In labor force	7.8	7.9	7.7
Working full time	7.7	7.8	7.5
Missing work for own illness			
In labor force	4.6	3.8	5.5
Working full time	4.7	3.9	5.8

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Note: The reference period for new work-limiting health conditions and major and minor health shocks is the time between the two survey waves, which is approximately two years; for missing work for own illness, the reference period is the calendar year before the year of the interview (e.g., calendar year 2004 for the 2005 interview wave).

People who experience new health issues differ from the overall population of adults in the labor force across various sociodemographic and economic characteristics. Generally, they are older, slightly more likely to be female, less educated, have lower incomes, and work in jobs that are less likely to require computer skills and offer fewer benefits, especially pensions (table 2). Although less likely to be partnered, adults with health limitations on average have somewhat larger family networks that they might rely on for support. They are also less likely to live in urban areas. As expected, people with new health issues also have worse baseline health as measured by self-rated health, likelihood of overnight hospital stays, and out-of-pocket health expenditures other than health insurance expenditures.

TABLE 2

Sample Characteristics for People in Labor Force and Working Full Time, 2005–15

	All	Work-limiting health condition	Major health shock	Minor health shock	Missing work for own illness
In labor force					
Age (years)	42.2	45.3	44.7	45.2	43.8
Female	49	53	51	48	58
Race and ethnicity					
Non-Hispanic white	76	74	80	73	75
Non-Hispanic black	11	12	11	13	12
Other	13	14	9	14	13
Married or partnered	72	67	66	72	68
Family network size (#)	3.7	4.0	3.8	4.1	3.8
Education					
Less than high school	10	16	13	12	12
High school/GED	27	30	27	33	31
Some college	26	26	30	26	28
College or higher	37	28	30	30	28
Fair or poor self-rated health	9	21	22	15	23
Any overnight hospital stay	7	11	11	8	45
Out-of-pocket health expenditures (\$)	1,558	1,922	1,985	1,778	2,323
Living in urban area	75	71	72	73	73
Per capita household income (\$)	64,938	54,874	57,416	61,091	59,212
Occupation					
Professional	52	46	48	47	48
Service	26	30	30	27	28
Blue-collar	22	24	22	26	24
Tertiary sector	77	77	81	77	79
Computer use at work	52	43	49	47	51
Job offers pension	47	39	42	46	56
Working full time					
Age (years)	42.5	45.8	45.3	45.6	44.0
Female	44	48	47	43	54
Race and ethnicity					
Non-Hispanic white	76	75	82	73	74
Non-Hispanic black	10	11	10	13	13
Other	13	13	9	14	13

	All	Work-limiting health condition	Major health shock	Minor health shock	Missing work for own illness
Married or partnered	73	70	66	74	69
Family network size (#)	3.7	4.0	3.7	4.1	3.8
Education					
Less than high school	9	15	11	11	11
High school/GED	27	29	27	32	32
Some college	25	26	30	26	29
College or higher	38	30	32	32	28
Fair or poor self-rated health	8	20	18	13	22
Any overnight hospital stay	6	11	11	7	45
Out-of-pocket health expenditures (\$)	1,589	2,011	2,112	1,855	2,352
Living in urban area	75	70	73	74	73
Per capita household income (\$)	68,019	59,333	62,734	65,725	59,936
Occupation					
Professional	53	49	51	49	49
Service	24	27	27	25	26
Blue-collar	23	25	22	26	25
Tertiary sector	75	75	79	76	78
Computer use at work	58	51	57	53	56
Job offers pension	55	50	53	55	65

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

In addition to being distinct from the general population of adults in the labor force, people who experience new health issues also differ among themselves according to the type of new issue. For example, people who reported a new work-limiting health condition are older⁹ and less educated than their peers with other types of new health issues. Comparatively, they are also least likely to live in urban areas, more likely to work in nonprofessional jobs that do not require computer use or offer pension benefits, and they have the lowest incomes. Those who reported missing work at baseline for their own illness for at least three weeks have the poorest baseline health based on other health indicators; this might be expected given that for other measures of health issues, this is a leading indicator as opposed to the same period indicator. However, self-rated health among those who reported a new work-limiting health condition or a new major health shock is very similar to self-rated health among those who miss work for their own illness at baseline, suggesting that self-reports may be a good lead indicator of health issues to come. People who report new minor health shocks exhibit the smallest magnitude of difference compared with the general population of adults in the labor force (although they remain distinct), and they are somewhat similar to others who experience a new health issue. Similar patterns of differences to the one just described for adults in the labor force at baseline can be observed for full-time employed adults at baseline.

About 92.6 percent of adults remain in the labor force within a two-year period, and 85.6 percent of those who work full time at baseline continue working full time two years later (table 3). Experiencing various health issues, especially new work-limiting health conditions and major health shocks, is associated with an accelerated exit from the labor force in general and from the full-time work in particular. However, most people coping with new health issues continue to work and mostly work full time, even many years after the onset of a health issue.

TABLE 3

Share of Adults Ages 18–62 at Baseline Who Remain in the Labor Force and Working Full Time over Time, 2005–15

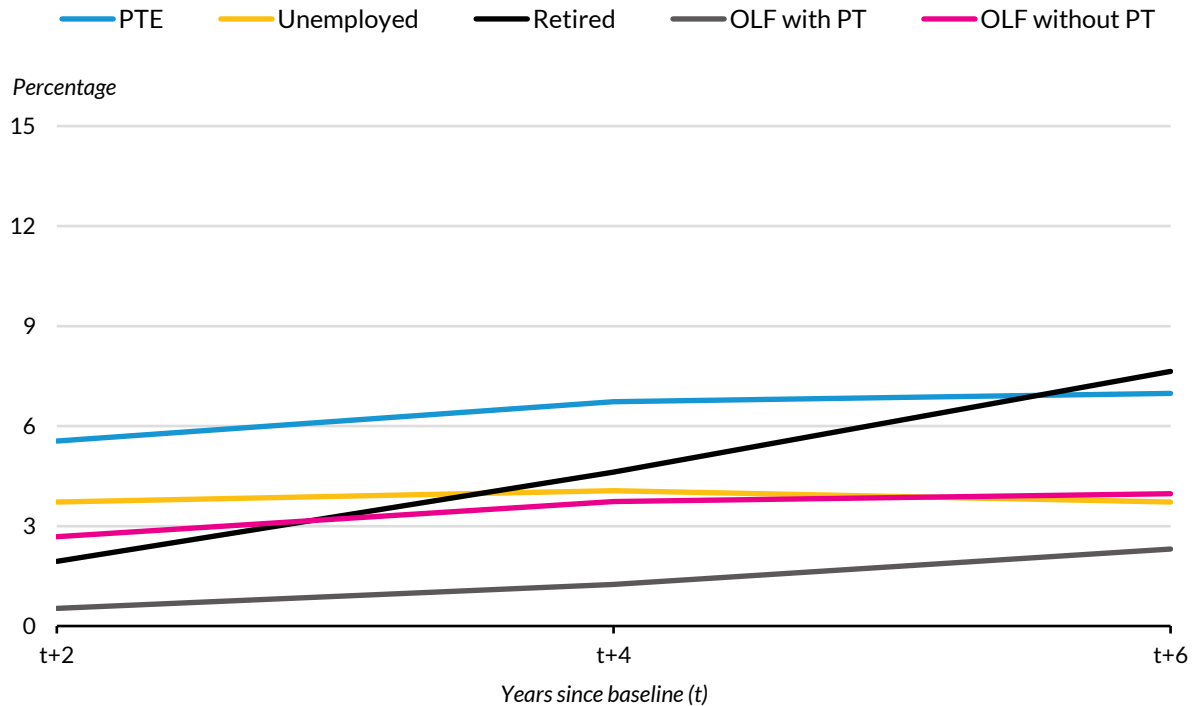
	In Labor Force			Working full time		
	t+2	t+4	t+6	t+2	t+4	t+6
All	92.6	88.1	83.9	85.6	79.6	75.4
Work-limiting health condition	75.5	66.4	62.1	64.5	54.8	51.5
Major health shock	81.5	73.7	67.8	73.8	64.8	57.2
Missing work for own illness	85.3	78.4	73.6	77.8	69.1	65.1
Minor health shock	89.0	82.5	78.7	83.2	74.0	70.3

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Although most working-age adults faced with a new health issue remain in the labor force, the likelihood of their exit from the labor force and full-time employment increases sharply immediately following the onset of the health issue and generally continues growing in subsequent periods compared with those who did not experience any new health issue. The extent of these differences varies substantially by the type of health issue. Having a new work-limiting health condition appears to have the most adverse impact on the likelihood of working, followed by having a new major health shock. For example, at the first interview following the onset of a work-limiting health condition, the likelihood of working full time is more than 21 percentage points lower than the average likelihood for adults ages 18 to 62 and employed full time at baseline, and in subsequent years the difference grows further to roughly 25 percentage points. Missing work for one's own illness for a minimum of three weeks and being diagnosed with a new minor health issue, on the other hand, appear to have a substantially smaller adverse impact on labor force participation and full-time employment. For the remainder of this analysis, we focus primarily on the impact of new work-limiting health conditions and, to a lesser extent, new major health shocks, because these health issues are the most pertinent to the public benefits that might support the well-being of workers who experience health issues that may temporarily or permanently limit their ability to work and precipitate their exit from the labor force.¹⁰

FIGURE 1

Share of All Full-Time Employed Workers at Baseline Who Transition Out of Full-Time Employment over Time, 2005–15



URBAN INSTITUTE

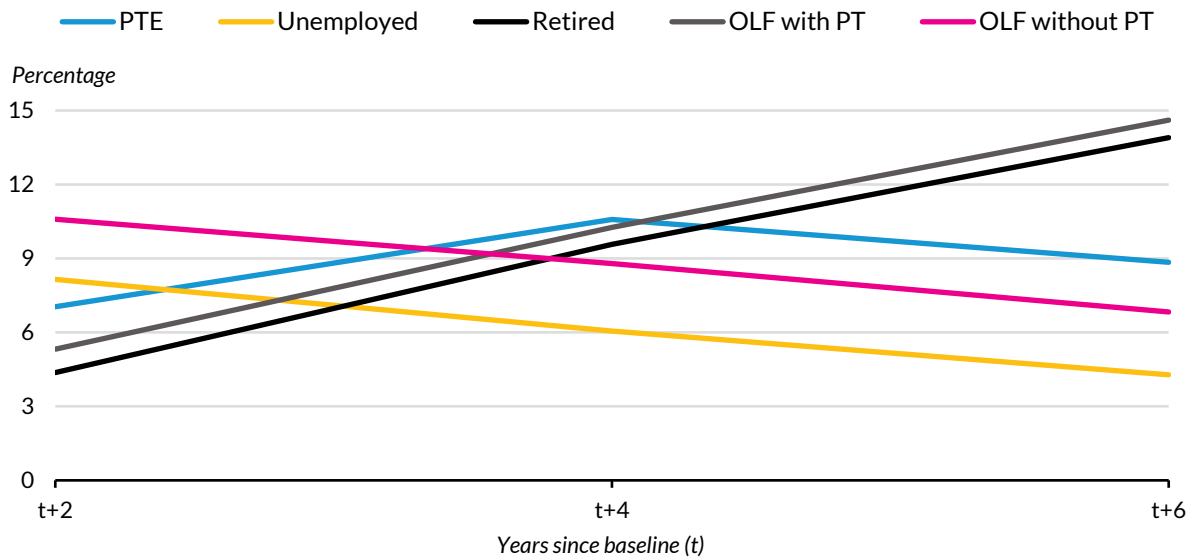
Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Notes: PTE = part-time employed; OLF = out of labor force; PT = public transfers (such as Social Security Disability Income, Supplemental Security Income, Veterans Administration benefits, Temporary Assistance for Needy Families, and other welfare).

Figures 1 and 2 show the shares of full-time employed workers at baseline who transition out of full-time employment in subsequent years (two, four, and six years later), both among all full-time workers and among those who reported that a new work-limiting health condition occurred after the baseline but before the first follow-up interview. Beyond the higher likelihood of exit from full-time employment for those with a new work-limiting health condition, their paths and the dynamics of exit are quite distinct compared with the overall population of full-time employed workers. At the first follow-up wave, they are most likely to leave the labor force without retiring or receiving any public cash transfer such as SSDI or SSI, various veteran's benefits, Temporary Assistance for Needy Families, and other welfare payments. This is followed by remaining in the labor force, but being unemployed. Among those without a new work-limiting health condition, the most common transition out of full-time work is part-time work. Over time, however, a growing share of those with a new work-limiting health condition either receives public transfers (overwhelmingly SSDI or SSI benefits) or retires; the share of unemployed and out of labor force without any public transfers declines, although the latter remains twice as high than the number of all full-time employed workers even six years following the baseline interview.¹¹

FIGURE 2

Share of Full-Time Employed Workers at Baseline with New Work-Limiting Health Condition Who Transition Out of Full-Time Employment over Time, 2005–15



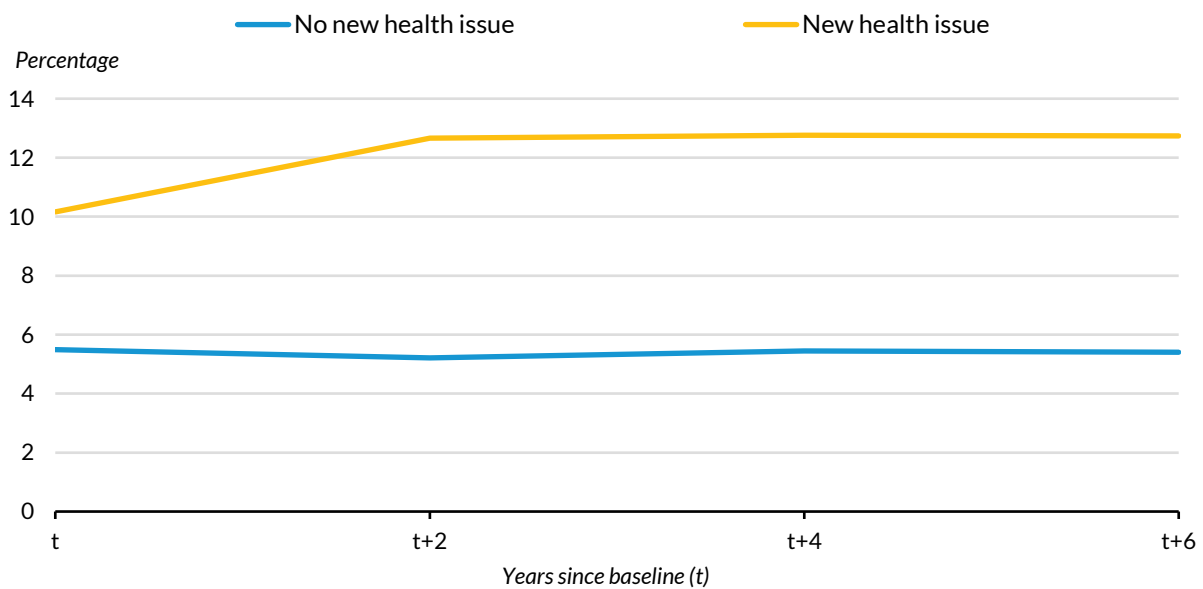
URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Notes: PTE = part-time employed; OLF = out of labor force; PT = public transfers (such as Social Security Disability Income, Supplemental Security Income, Veterans Administration benefits, Temporary Assistance for Needy Families, and other welfare).

FIGURE 3

Share of Adults Ages 18–62 in the Labor Force at Baseline Who Are Below the Federal Poverty Level at Baseline and Subsequently, by New Work-Limiting Health Condition Occurrence, 2005–15

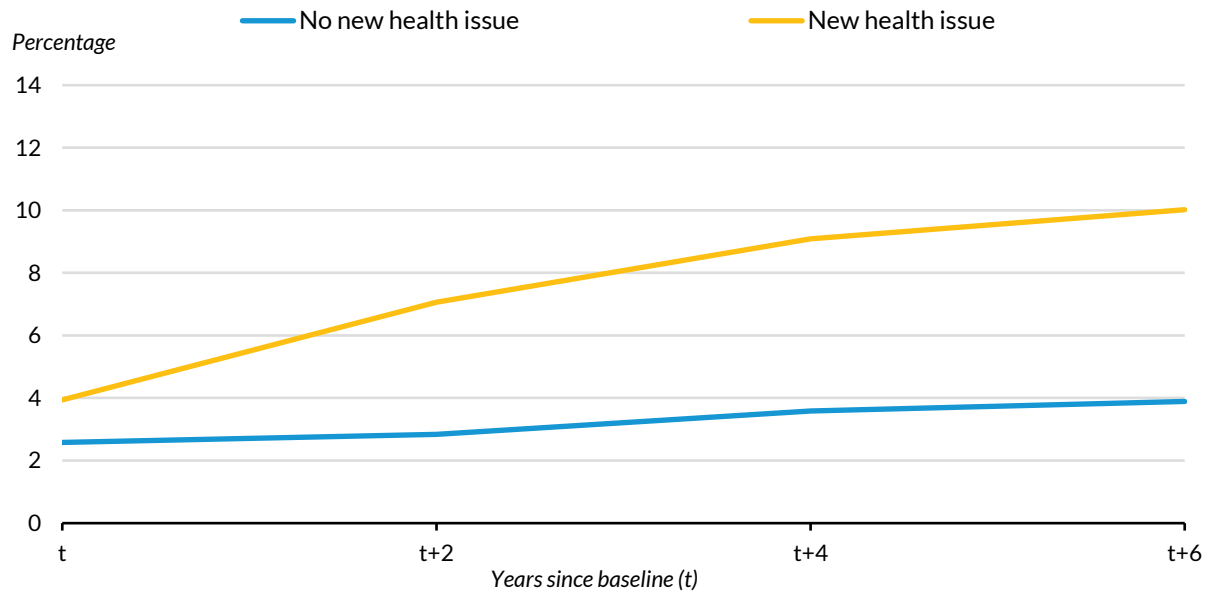


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 4

Share of Adults Ages 18–62 Working Full Time at Baseline Who Are Below Federal Poverty Level at Baseline and Subsequently, by New Work-Limiting Health Condition Occurrence, 2005–15

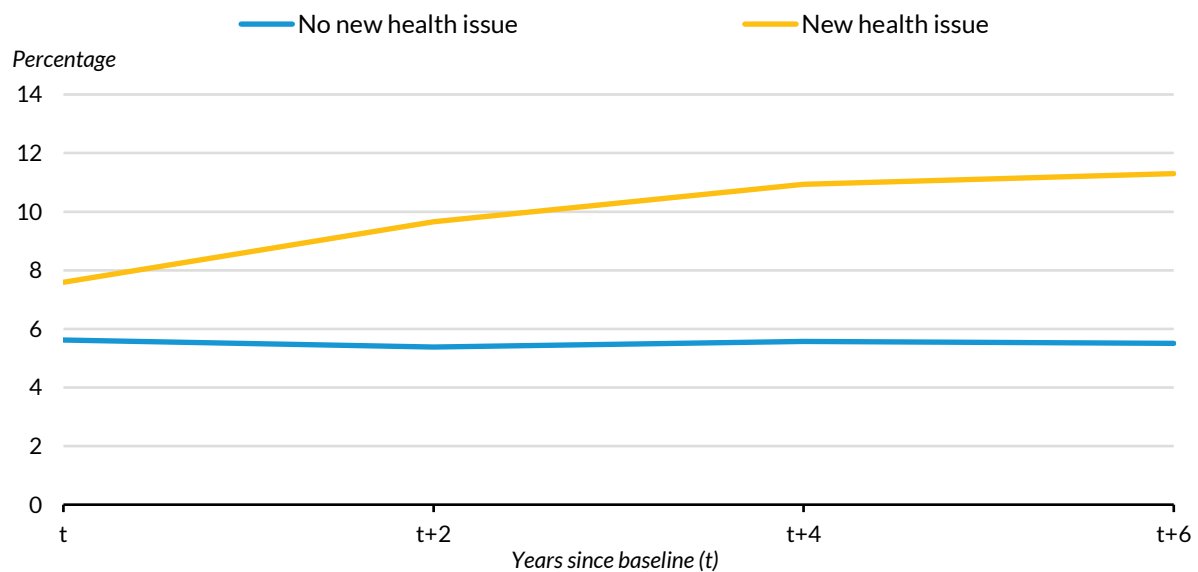


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 5

Share of Adults Ages 18–62 in the Labor Force at Baseline Who Are Below Federal Poverty Level at Baseline and Subsequently, by New Major Health Shock Occurrence, 2005–15

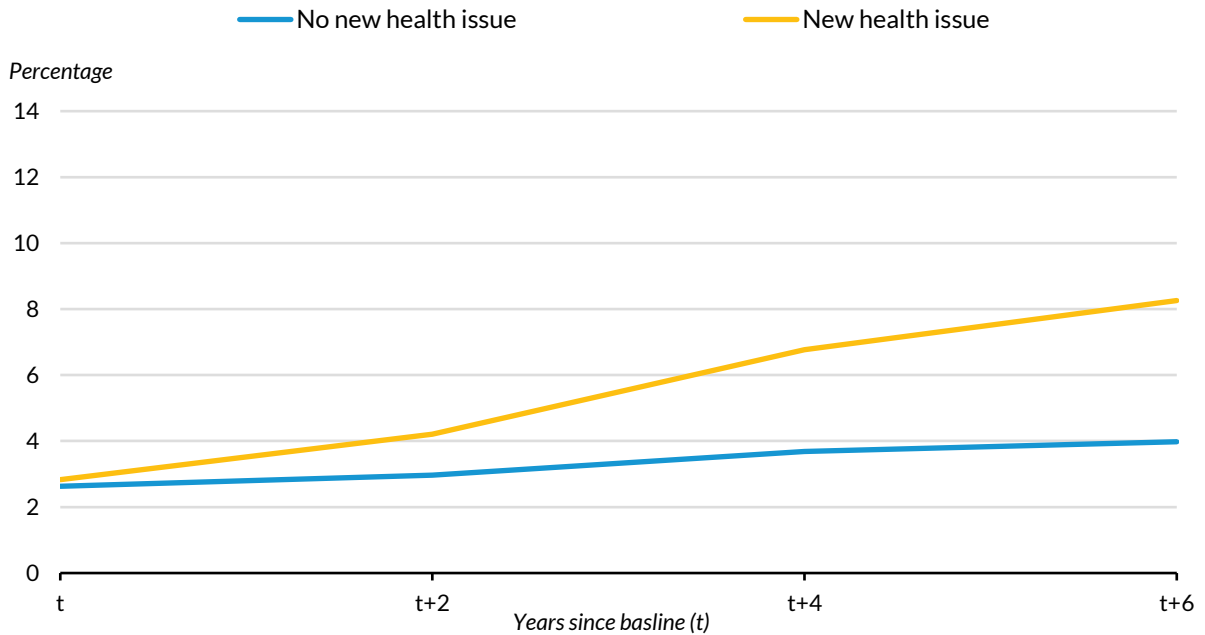


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 6

Share of Adults Ages 18–62 Working Full Time at Baseline Who Are Below Federal Poverty Level at Baseline and Subsequently, by New Major Health Shock Occurrence, 2005–15



URBAN INSTITUTE

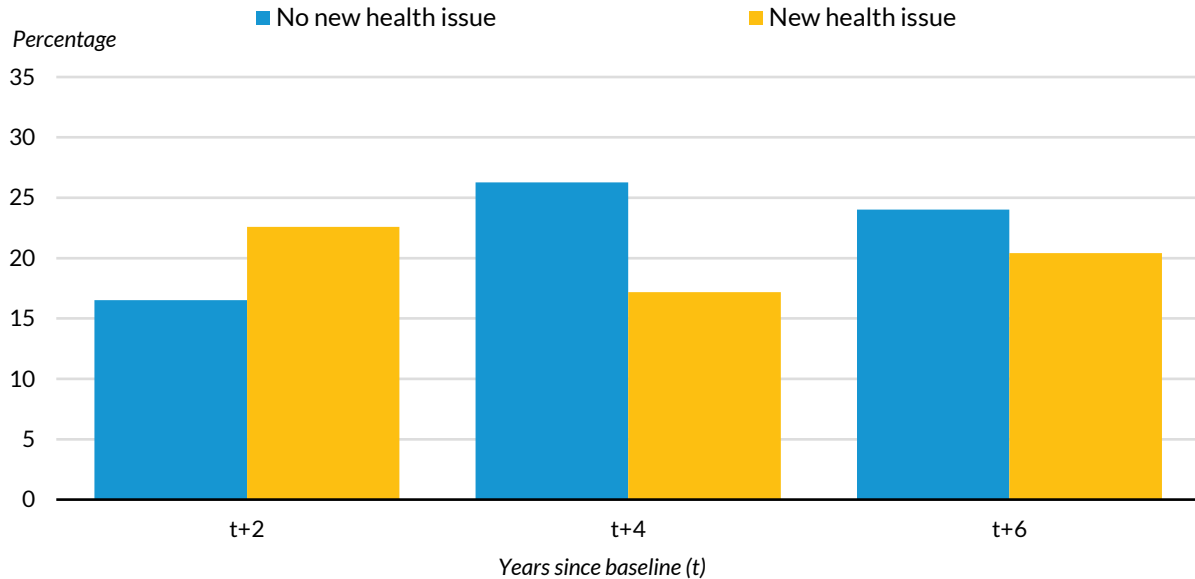
Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Differences in pathways out of the labor force are important because they may have substantial ramifications on the economic well-being of workers. Indeed, adults faced with a new work-limiting health condition or a new major health shock face an elevated risk of falling below the federal poverty level, as shown in figures 3 through 6. Importantly, this risk increases over time, suggesting that many workers who experience new health issues find themselves in a precarious financial situation.

Although experiencing new health issues and being at a higher risk of stopping work seems to adversely affect the financial security of workers in general, those who leave the labor force and do not receive any public support may find themselves in a particularly vulnerable position. To examine whether the current system of public supports successfully protects the most economically vulnerable workers from the financial risks associated with the onset of health issues, we compare workers with and without new health issues who transitioned out of full-time employment¹² without retiring and who either receive or don't receive public transfers (figures 7 through 10).

FIGURE 7

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers and Who Fall Below Federal Poverty Level after Baseline, by New Work-Limiting Health Condition Occurrence, 2005–15

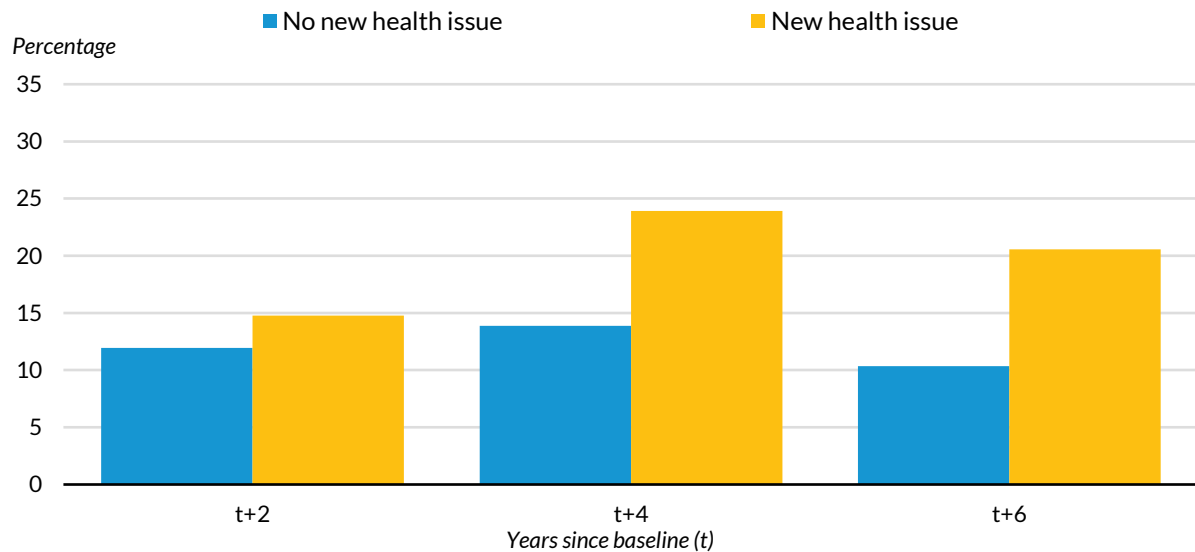


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 8

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers and Who Fall Below Federal Poverty Level after Baseline, by New Work-Limiting Health Condition Occurrence, 2005–15

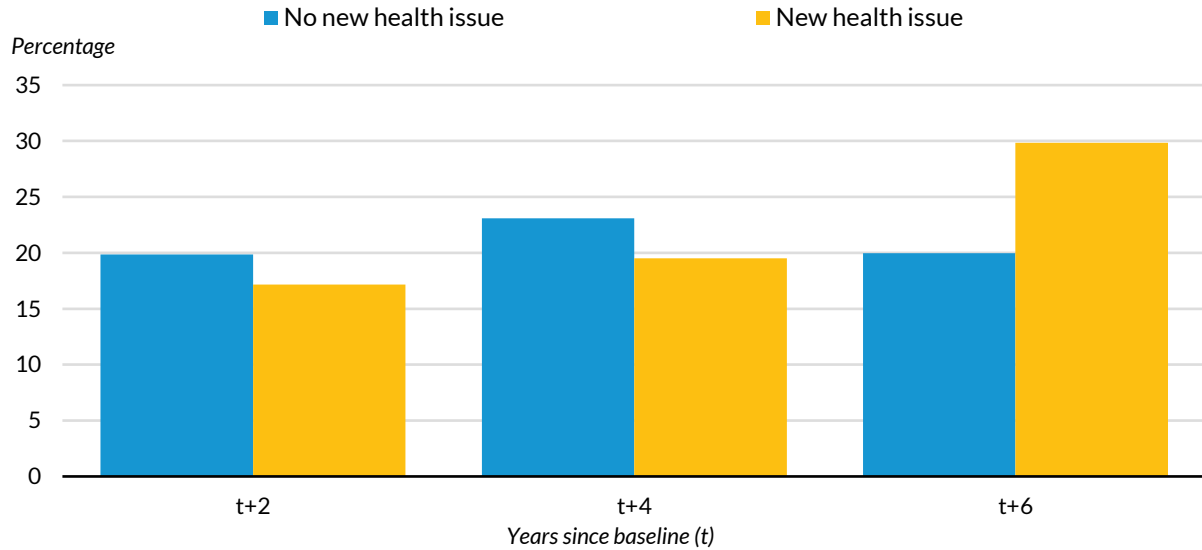


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 9

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers and Who Fall Below Federal Poverty Level after Baseline, by New Major Health Shock Occurrence, 2005–15

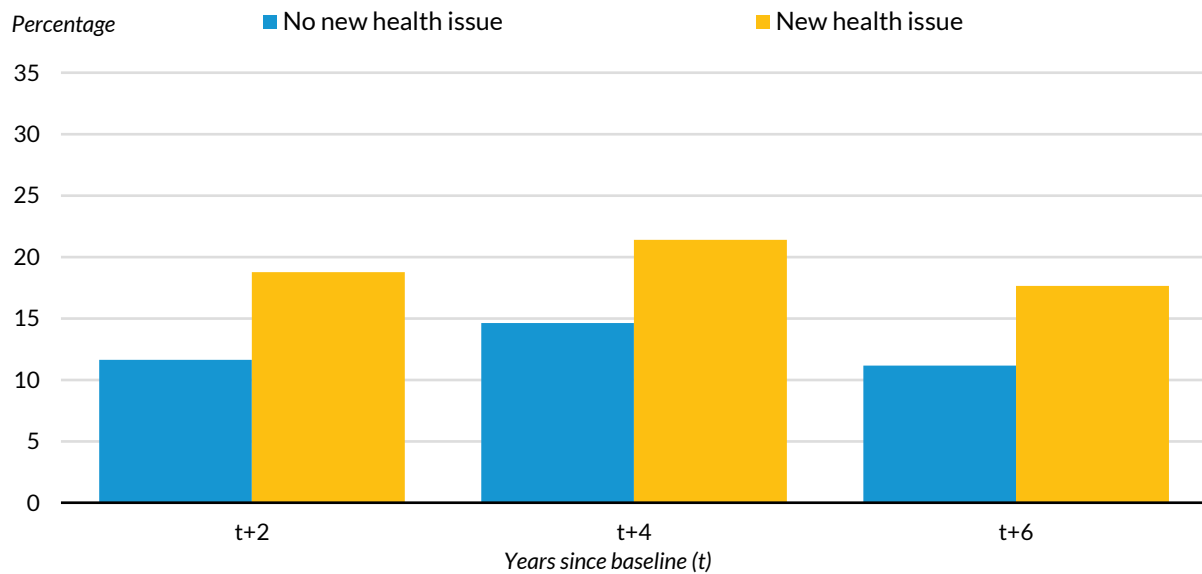


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 10

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers and Who Fall Below Federal Poverty Level after Baseline, by New Major Health Shock Occurrence, 2005–15



URBAN INSTITUTE

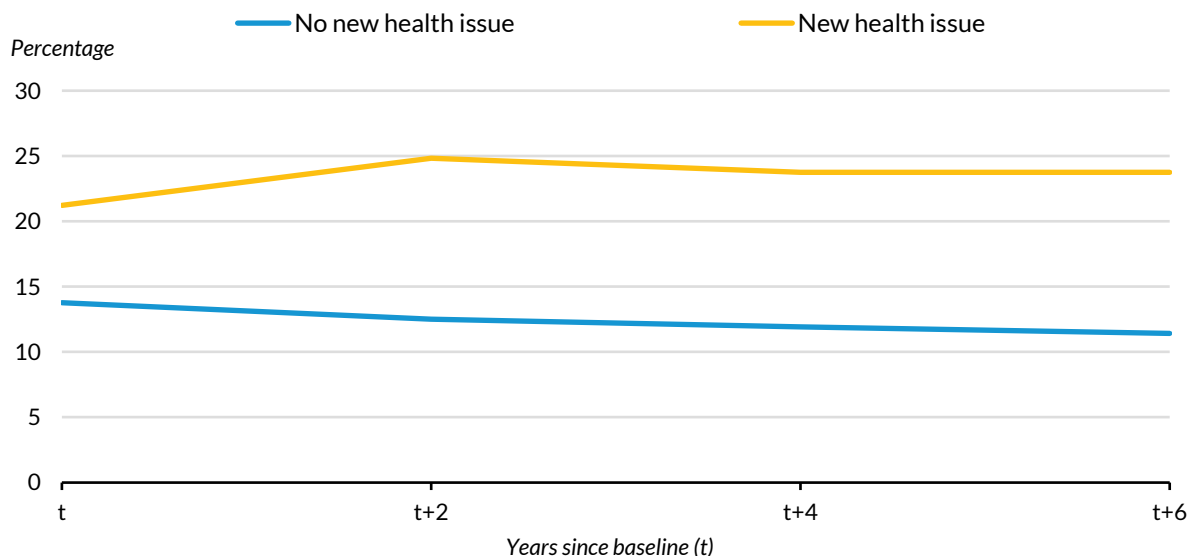
Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

This comparison yields several interesting insights. First, the risk of falling below the federal poverty level is generally higher among those who receive public transfers, which is consistent with stringent financial criteria to qualify for such support, and a high need for support among people eligible to receive it. At the same time, the risk is not declining over time, suggesting that the level of public support may not be sufficient to keep many of its recipients from poverty. However, the risk is roughly similar regardless of health status, suggesting that public support, such as SSDI or SSI benefits, may prevent its recipients from being further disadvantaged by their health status. This is in stark contrast to those who leave the labor force without receiving public transfers. People who do so and suffer from a new health issue are clearly at an elevated risk of falling into poverty, and they are generally at a similar risk of becoming poor as those who receive public support.

Similar trends can be observed if we focus on adults ages 18 to 62 and working full time at baseline who are in the bottom quartile of the income distribution¹³ in subsequent years after transitioning out of the labor force, either with or without receiving public cash transfers. Figures 11 through 14 show that although those who experience new health issues are already at an elevated risk of being in the bottom income quartile, their position relative to those who do not experience a new health shock worsens over time.

FIGURE 11

Share of Adults Ages 18–62 in the Labor Force at Baseline Who Are in the Lowest Income Quartile at Baseline and Subsequently, by New Work-Limiting Health Condition Occurrence, 2005–15

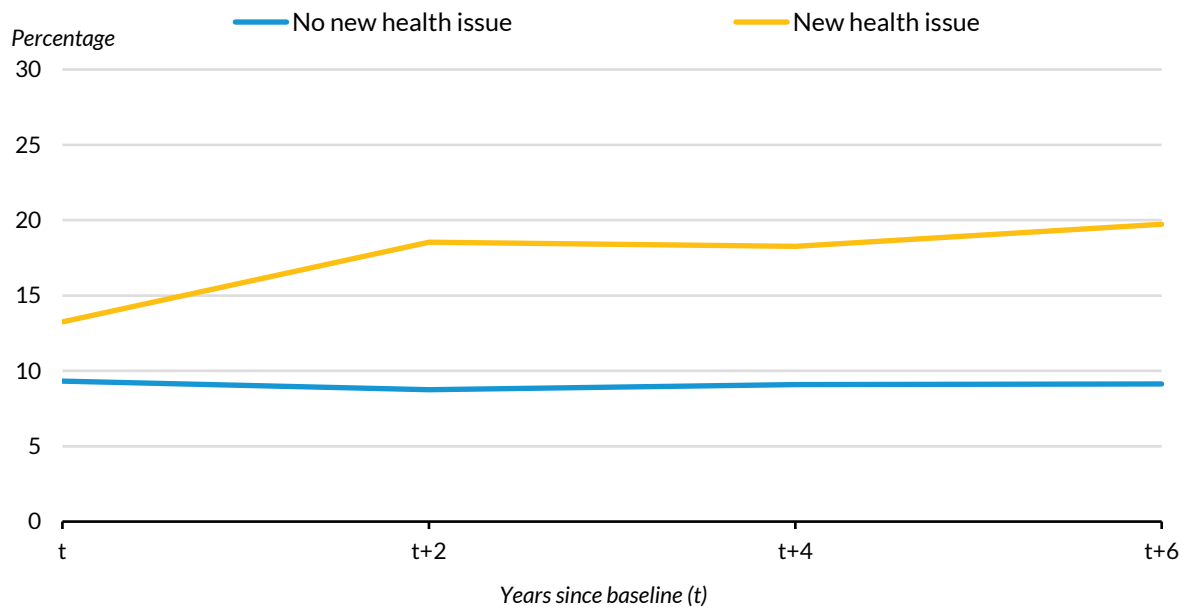


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 12

Share of Adults Ages 18–62 Working Full Time at Baseline Who Are in the Lowest Income Quartile at Baseline and Subsequently, by New Work-Limiting Health Condition Occurrence, 2005–15

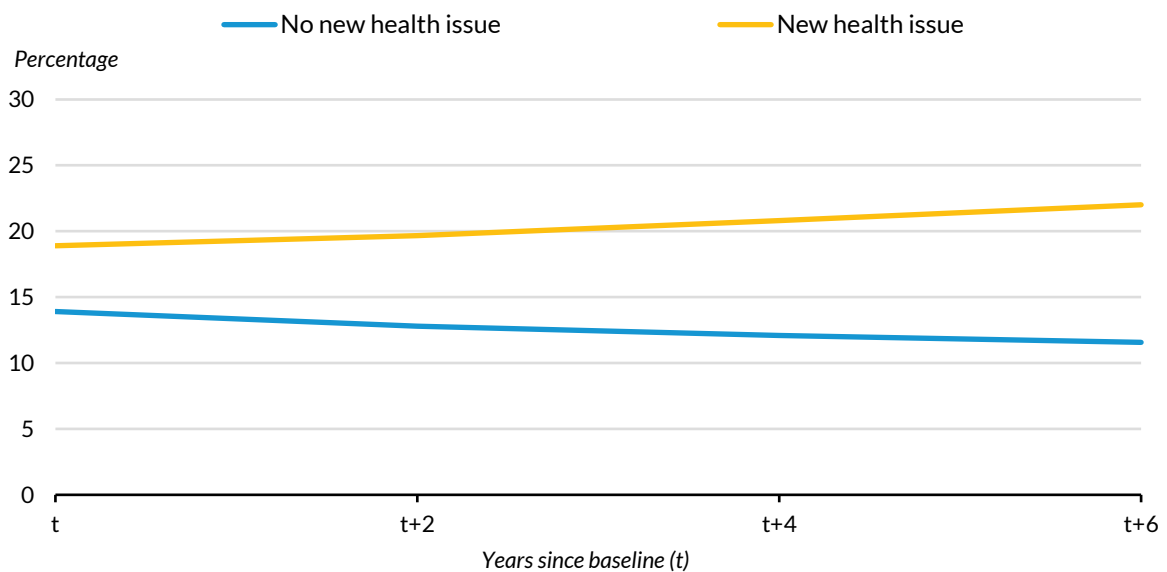


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 13

Share of Adults Ages 18–62 in the Labor Force at Baseline Who Are in the Lowest Income Quartile at Baseline and Subsequently, by New Major Health Shock Occurrence, 2005–15

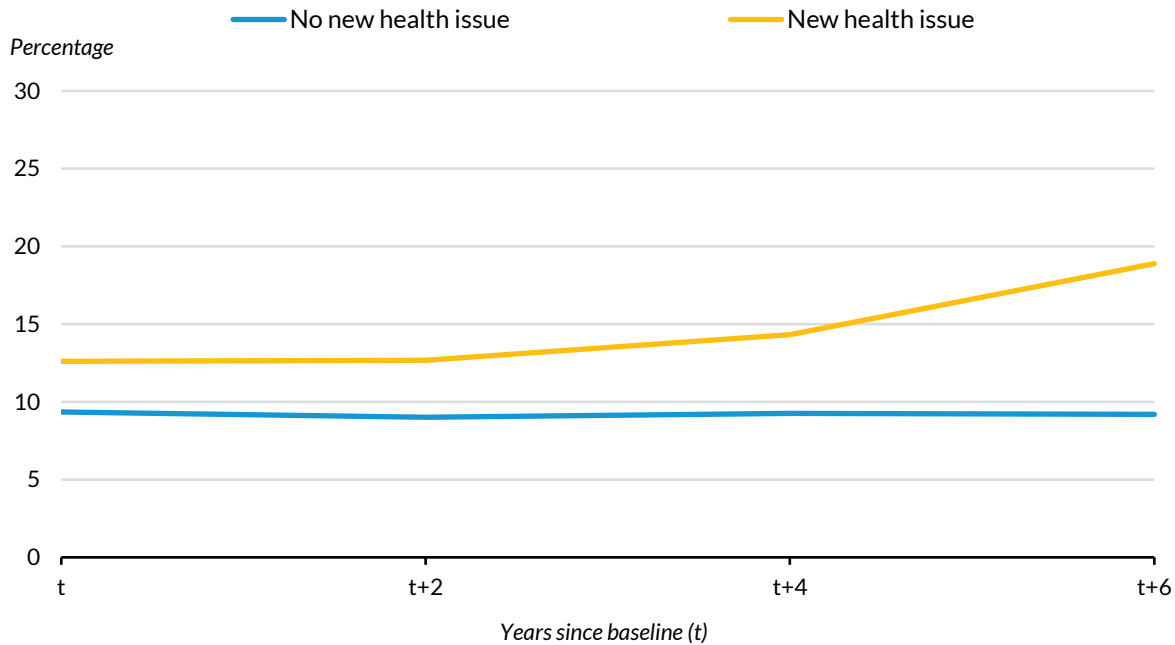


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 14

Share of Adults Ages 18–62 Working Full Time at Baseline Who Are in the Lowest Income Quartile at Baseline and Subsequently, by New Major Health Shock Occurrence, 2005–15

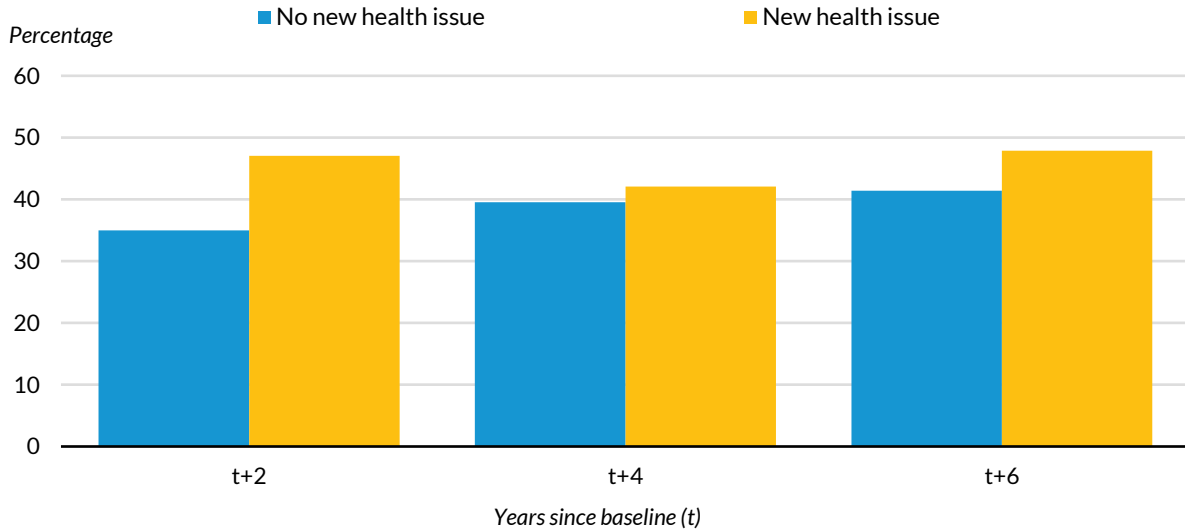


Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

One of the major contributing factors to this worsening relative position of those who suffer from a new health issue is a precipitous deterioration experienced by those who stop working and do not retire or start receiving public support. Figures 15 through 18 compare the differences in the likelihood of being in the lowest income quartile after exiting the labor force without retiring by new health issue occurrence and receipt of public financial support. As shown, the lack of public transfers is much more detrimental for those who experienced a new health issue before exiting the labor force because their likelihood of being in the lowest income quartile increases over time, ultimately reaching similar likelihood to those who receive public support. Simultaneously, the likelihood remains roughly constant over time for those who had a new health issue and receive public transfers after exiting the labor force, and at no point does it differ substantially from the likelihood observed for their peers who did not experience a new health issue before exiting the labor force.

FIGURE 15

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers and Who Are in the Lowest Income Quartile after Baseline, by new Work-Limiting Health Condition Occurrence, 2005–15

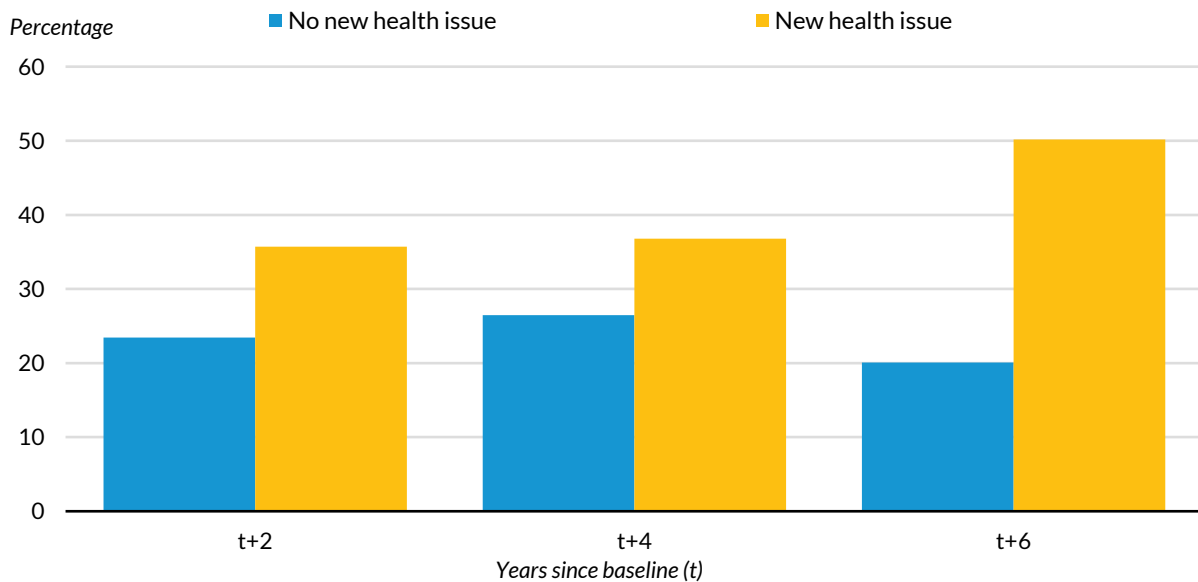


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 16

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers and Who Are in the Lowest Income Quartile after Baseline, by New Work-Limiting Health Condition Occurrence, 2005–15

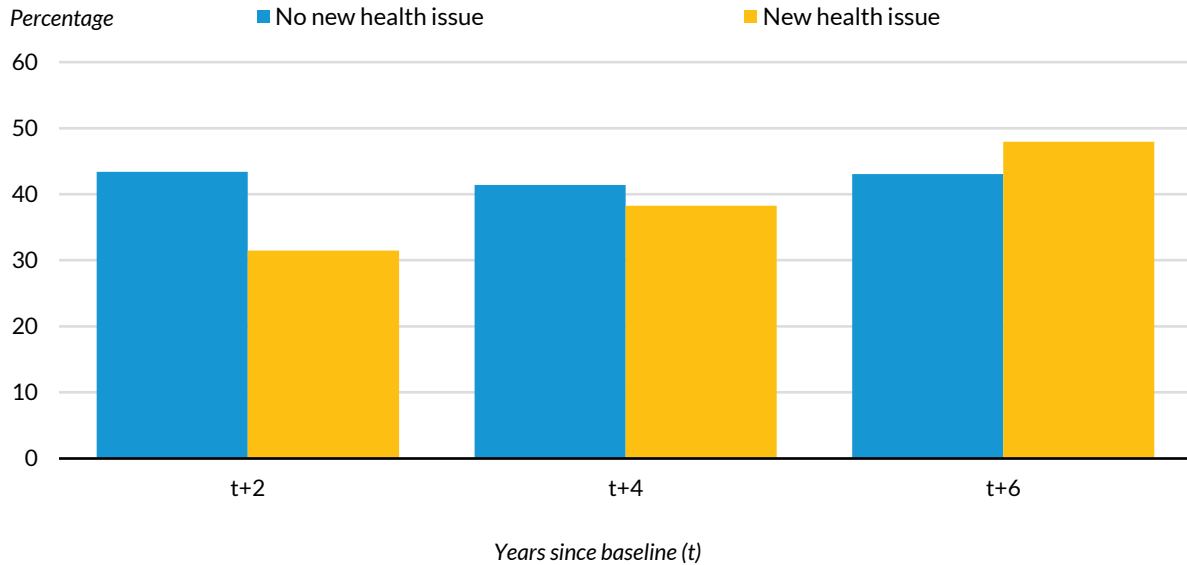


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 17

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers and Who Are in the Lowest Income Quartile after Baseline, by New Major Health Shock Occurrence, 2005–15

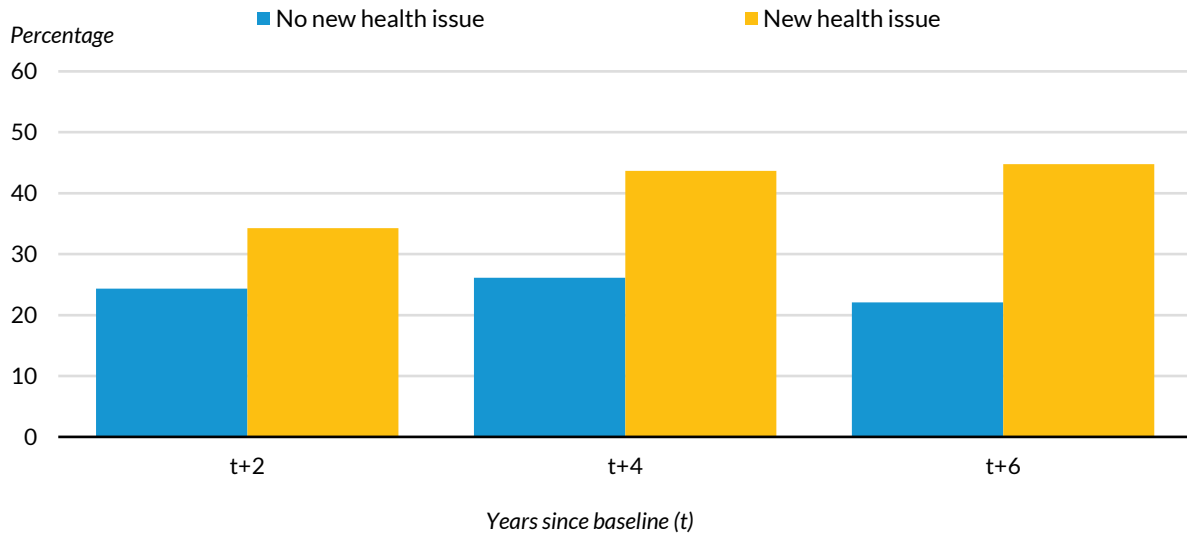


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 18

Share of Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers and Who Are in the Lowest Income Quartile after Baseline, by New Major Health Shock Occurrence, 2005–15



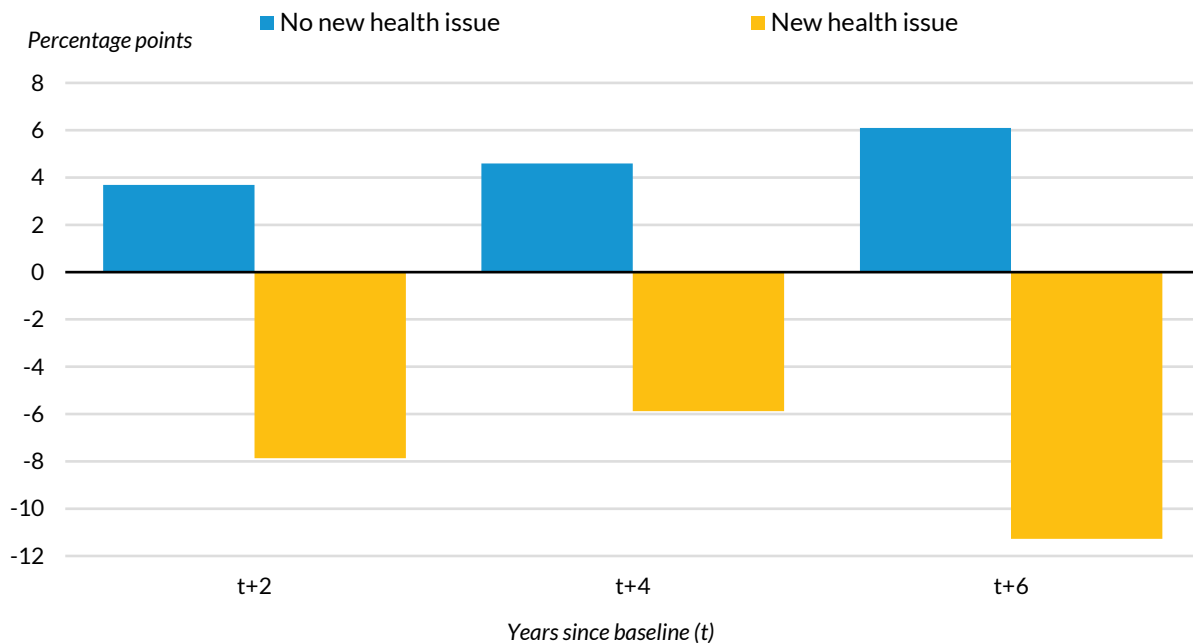
URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

To assess the impact of health shocks on income distribution more generally, we also compare the extent to which people ages 18 to 62 who are working full time at baseline transition to higher income quartiles relative to lower income quartiles. Figures 19 and 20, which show the difference over time by the type of health issues, suggest that experiencing a health issue is associated with an increased likelihood of downward transition in income distribution, especially if a worker suffers from a new work-limiting health condition; the absence of new health issues is associated with a higher likelihood of upward transition in income distribution. Moreover, the overall magnitude of the difference between the two groups of workers increases over time, suggesting that suffering from a new health issue is associated with a cumulatively worse outcome.

FIGURE 19

Difference in the Share of Adults Ages 18–62 Working Full Time at Baseline Who Transition to Higher (as opposed to lower) Income Quartile after Baseline, by New Work-Limiting Health Condition Occurrence, 2005–15

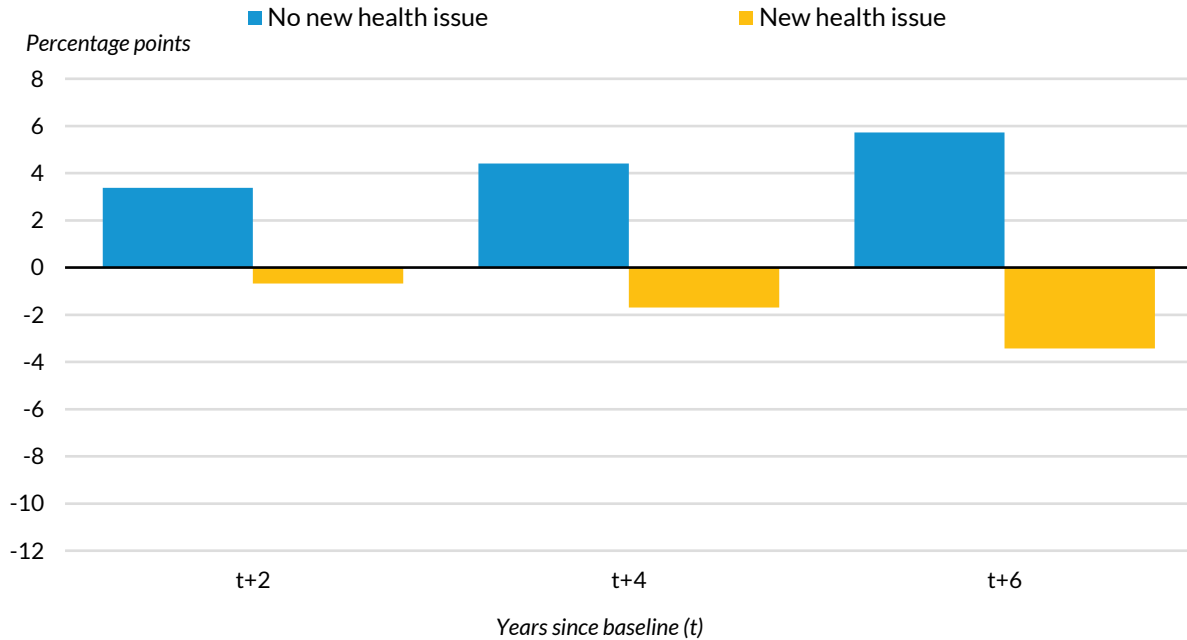


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 20

Difference in the Share of Adults Ages 18–62 Working Full Time at Baseline Who Transition to Higher (as opposed to lower) Income Quartile after Baseline, by New Major Health Shock Occurrence, 2005–15



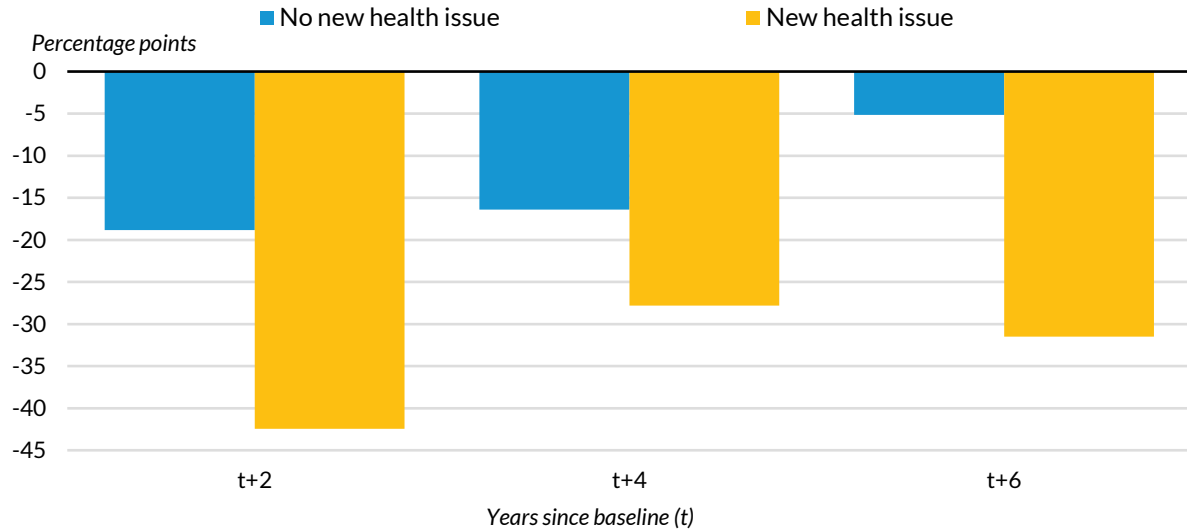
URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

These general trends are also reflected in the trends for workers who transition out of the labor force without retiring and either receive or do not receive public transfers (figures 21 through 24). The main difference is that such transitions, regardless of the health status, are associated with an increased likelihood of a downward move in income distribution. Unlike in the preceding analysis, the relative position of those who receive public support and have not had any new health issue improves somewhat over time; it remains comparatively worse and largely unchanged over time for those who suffer from a new health issue and receive public transfers. For those who had a new health issue and receive no public support, we observe again that their relative position worsens the most over time.

FIGURE 21

Change in Income Quartile after Baseline for Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers, by New Work-Limiting Health Condition Occurrence, 2005–15

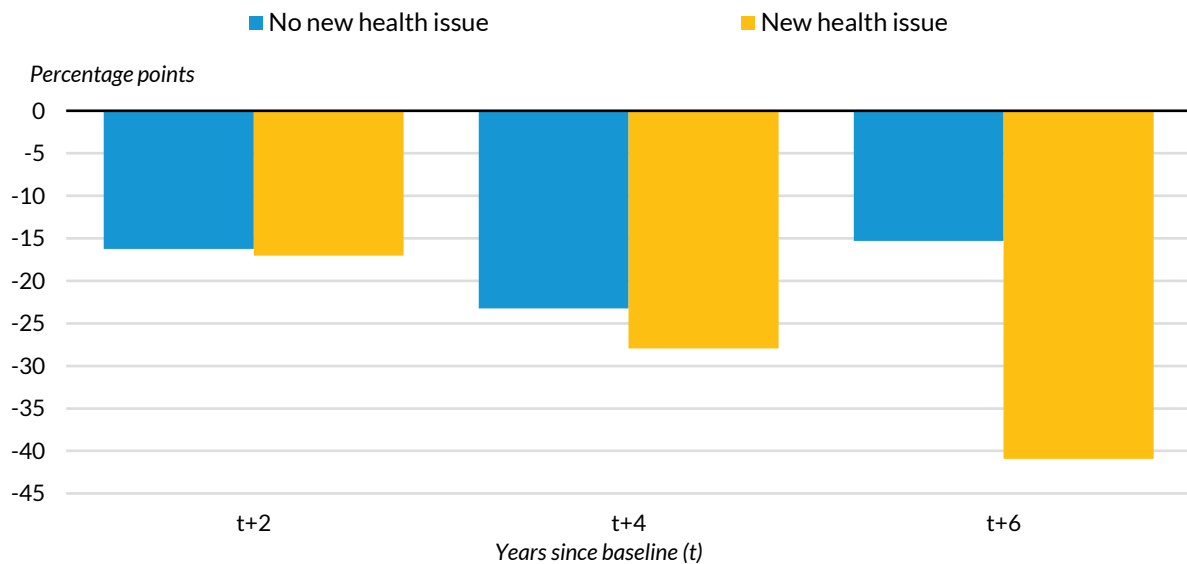


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 22

Change in Income Quartile after Baseline for Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers, by New Work-Limiting Health Condition Occurrence, 2005–15

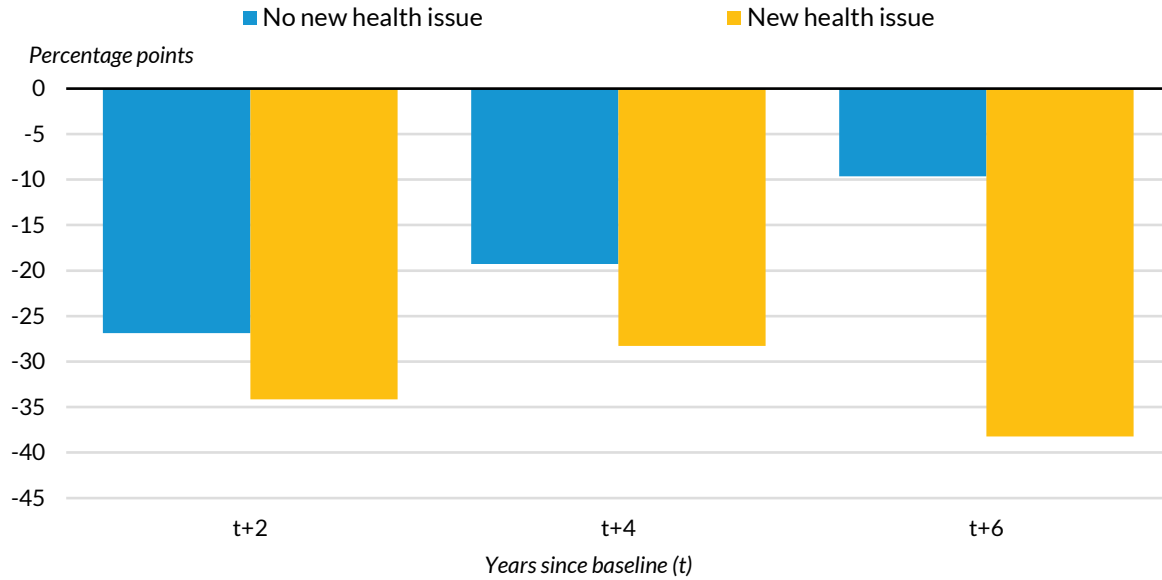


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 23

Change in Income Quartile after Baseline for Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force Receiving Public Transfers, by New Major Health Shock Occurrence, 2005–15

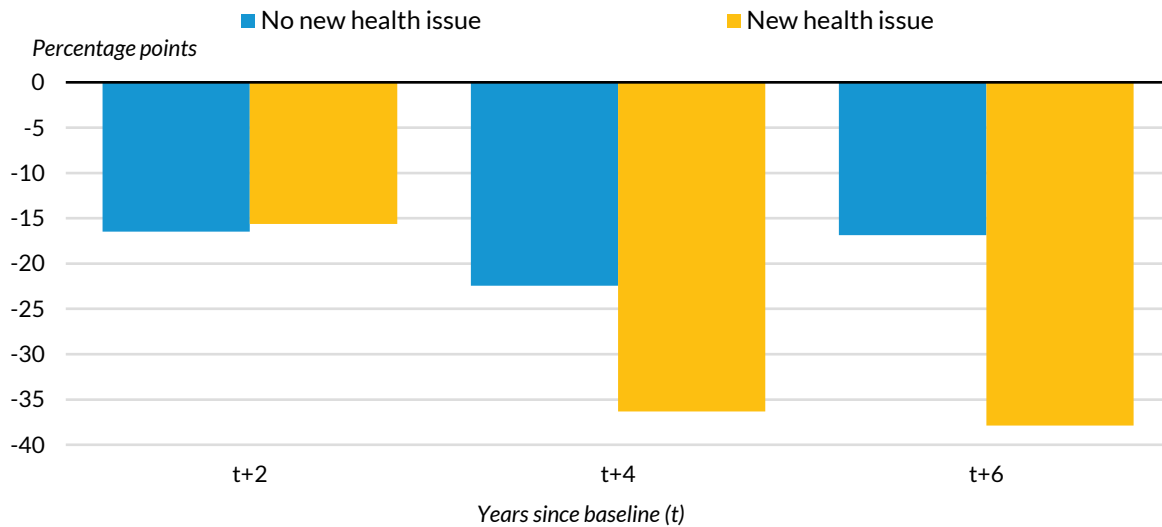


URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

FIGURE 24

Change in Income Quartile after Baseline for Adults Ages 18–62 Working Full Time at Baseline Who Dropped Out of Labor Force without Receiving Public Transfers, by New Major Health Shock Occurrence, 2005–15



URBAN INSTITUTE

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Inferential Analysis

To examine the association of different measures of health issues with transition out of the labor force and full-time employment in particular, we first fit a pooled multinomial logistic regression of labor force transition, controlling for key sociodemographic, economic, and baseline health characteristics, as well as for baseline job characteristics and period effects. Models are fit for each outcome for the three periods following the baseline (that is, at two, four, and six years after). Summary of the key results is available in table 4, and detailed results that include all control variables are shown in table A.2.

TABLE 4

Multinomial Logistic Regression of Transition Out of the Labor Force and Full Time Employment within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 at Baseline, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Ref. In labor force/Full time						
Part time						
New major health shock				1.09	1.26+	1.40*
New minor health shock				0.84+	1.10	1.01
New work-limiting health condition				1.58***	1.95***	1.84***
Missing work for own illness				0.97	1.20	1.33*
Unemployed						
New major health shock				1.68***	1.40*	1.51*
New minor health shock				0.96	1.06	1.11
New work-limiting health condition				2.67***	1.57**	1.28
Missing work for own illness				1.16	1.11	1.13
Retired						
New major health shock	1.33+	1.30+	1.13	1.27	1.40*	1.14
New minor health shock	1.04	1.10	1.09	1.09	1.07	0.99
New work-limiting health condition	1.89***	2.13***	1.90***	2.21***	2.39***	2.30***
Missing work for own illness	1.44*	1.35*	1.20	1.94***	1.44*	1.21
Out of labor force - receiving public transfer						
New major health shock	3.40***	3.38***	4.32***	3.98***	3.50***	4.93***
New minor health shock	1.29	1.69***	1.56***	1.26	1.56**	1.49**
New work-limiting health condition	8.65***	7.85***	6.08***	15.0***	10.2***	7.69***
Missing work for own illness	2.12***	2.43***	1.73**	1.98**	2.10***	1.40
Out of labor force - not receiving public transfer						
New major health shock	2.08***	1.94***	1.47**	2.61***	2.28***	2.00***

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
New minor health shock	1.36***	1.06	1.02	1.27*	1.08	0.83
New work-limiting health condition	3.82***	2.51***	1.87***	5.45***	3.11***	2.36***
Missing work for own illness	1.48***	1.30*	1.32*	1.61***	1.40*	1.24

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

The results suggest that although all indicators of new health issues are positively related with leaving the labor force without retiring, the indicator of a new work-limiting health condition consistently exhibits the largest magnitude of the association with such transitional pathway, and that indicator is also significantly associated with other pathways out of the labor force and full-time employment. Moreover, using this indicator to measure the prevalence of disability and gauge the impact of disability onset on various outcomes of interest finds support in studies that examined different measures of disability (e.g., Burkhauser, Houtenville, and Tennant 2013). Therefore, the rest of our inferential analysis (which is limited to workers who experienced new health issues) will focus on the subsample of those who experienced a new work-limiting health condition. We remain mindful, however, of the fact that no commonly used measure of work disability in major national surveys allows us to fully identify the population eligible for and receiving disability benefits (Haveman 2013), and our results should be interpreted in the context of this objective limitation.

We make several important observations around other predictors of labor force transitions, especially related to dropping out of the labor force with or without public assistance and not retiring. First, controlling for other factors, women are much more likely to stop working and not receive public support than men; the same holds true for partnered people compared with their unpartnered peers. On the other hand, minority workers other than non-Hispanic black people, a group consisting predominantly of Hispanic workers, are much less likely than non-Hispanic white people to exit the labor force with public assistance. Furthermore, age is positively correlated with a labor force exit with public transfer receipt and is negatively associated with a labor force exit without receiving public transfers. As expected, being better educated, being in better health at baseline, having a higher income, and working in professional jobs and in jobs that rely on computer use or offer pension benefits are all characteristics that protect workers from dropping out of the labor force without retiring. These results are largely confirmed once we limit the sample to those who had a new work-limiting health condition, although fewer predictors reach statistical significance, presumably because of a much smaller sample size (table 5).¹⁴

TABLE 5

Multinomial Logistic Regression of Transition Out of the Labor Force and Full-Time Employment without Receiving Public Transfers within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Ref. In labor force/Full time						
Age (years)	1.02*	1.01	1.01	1.03**	1.01	0.99
Female	2.16***	2.84***	4.29***	1.96**	2.84***	5.44***
Race or ethnicity (ref. Non-Hispanic white)	1	1	1	1	1	1
Non-Hispanic black	1.50*	1.70*	1.18	1.88**	1.58	0.92
Other	0.93	1.96*	1.34	1.08	2.82**	1.71
Married or partnered	1.21	1.44+	1.23	1.04	1.29	1.07
Family network size	1.01	0.96	1.00	0.99	1.01	1.06
Education (ref. Less than high school)	1	1	1	1	1	1
High school/GED	1.06	1.47	0.88	0.68	0.91	0.71
Some college	1.07	1.20	1.36	0.68	0.95	1.67
College or higher	0.64+	0.89	0.88	0.33**	0.68	1.12
Fair or poor self-rated health	1.12	1.07	1.11	0.98	1.06	1.43
Any overnight hospital stay	1.17	1.15	1.33	1.47	1.18	2.37+
IHS (out-of-pocket health expenditures)	0.96+	0.98	0.90*	0.93*	0.94	0.84**
Living in urban area	0.57***	0.81	0.77	0.54**	0.81	0.84
IHS (per capita household income)	0.87+	1.09	1.15	0.65**	1.14	1.65
Occupation (ref. Professional)	1	1	1	1	1	1
Service	1.48*	0.91	1.01	1.21	0.78	0.95
Blue-collar	2.18***	1.51	1.47	2.30**	1.29	2.59*
Tertiary sector	0.86	1.35	0.71	1.19	1.21	1.00
Computer use at work	0.99	0.61*	0.75	1.07	0.53*	0.67
Job offers pension	0.70*	0.43***	0.76	0.69+	0.42**	0.90
Wave (ref. 2005)	1	1	1	1	1	1
2007	1.34	1.42	1.73+	2.40**	1.82+	1.96+
2009	1.07	1.43	2.25**	1.23	1.61	2.20+
2011	1.13	1.40		1.51	1.57	
2013	1.45+			1.78*		

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: IHS - inverse hyperbolic sign transformed; + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

These results suggest that many vulnerable populations, especially women but also people of color, people living in rural areas, and low-income people working in blue-collar jobs, are at a higher risk of dropping out of the labor force without retiring or receiving any public support. Moreover, our previous descriptive analysis showed that those who transition out of the labor force without public assistance experience a decline in economic well-being over time, exemplified by higher likelihood of being in the lowest quartile of income distribution and falling below the federal poverty level. What remains unknown, however, is whether and to what extent the type of labor force transition accounts for the observed increased economic vulnerability once compositional differences among workers are accounted for. To address this issue, we fit a series of models examining the link between different labor force transition pathways and various measures of economic vulnerability, including a person's likelihood of falling into poverty, income level, and change in income distribution position.

TABLE 6

Logistic Regression of Falling Below the Federal Poverty Level and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

Labor force status (ref. In labor force/full time)	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Part time				5.31***	1.65	2.51 ⁺
Unemployed				5.25***	2.56*	3.57*
Retired	2.17	1.51	1.90	5.91**	1.07	2.03
Out of labor force, receiving public transfer	6.75***	2.29*	1.22	17.3***	2.96*	2.50
Out of labor force, not receiving public transfer	2.61***	2.53***	2.18*	6.50***	3.71***	3.08*

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: ⁺ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

The first of these models, shown in table 6, suggests that transitioning out of labor force following the occurrence of a new work-limiting health condition is generally associated with a higher likelihood of falling below the federal poverty level, but the impact is mostly transitory. The exception is if a worker drops out of the labor force without any public support (or remains unemployed over a longer period of time); in this case, even six years after the baseline, former workers continue to experience a significantly higher likelihood of falling below the federal poverty level than those who remain in the labor force or continue working full time, with the likelihood being more than twice as high than for those in the labor force and about three times as high than for those working full time. On the other hand, people who transition out of the labor force and receive public transfers initially have the highest likelihood of falling into poverty, but that likelihood declines precipitously by the next follow-up period,

and the observed difference becomes insignificant compared with those who are in the labor force or working full time within six years after the baseline.¹⁵

A somewhat similar dynamic can be observed if we focus on how a labor force transition following a new work-limiting health condition can affect income more generally. The results, presented in table 7, show that leaving full-time employment after a health shock is related to a lower income at the first follow-up (i.e., two years after baseline) than for those who remain employed full time, ranging from about one-fifth lower for those who retire to almost two-thirds lower for the unemployed. Within four years after the baseline (the second follow-up), the difference either disappears or substantially declines across most transition types except for those who left the labor force without retiring or receiving any public transfers, whose position worsens. By the third follow-up (six years after the baseline), that group remains the only group except the unemployed to still experience a significant negative impact of labor force transition on their incomes relative to their peers who continue to work.¹⁶

TABLE 7

Linear Regression of Income and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

Labor force status (ref. In labor force/full time)	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Part time				-0.23**	-0.044	-0.018
Unemployed				-0.64**	-0.28*	-0.30*
Retired	-0.048	-0.032	0.021	-0.22*	-0.12	-0.040
Out of labor force, receiving public transfer	-0.28**	-0.090	-0.37	-0.43***	-0.29*	-0.66
Out of labor force, not receiving public transfer	-0.22*	-0.42***	-0.58***	-0.26**	-0.47***	-0.36**

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Finally, we examine the likelihood of a change in relative income by type of labor force transition for adults ages 18 to 62 at baseline who experience a new work-limiting health condition before the first follow-up period. The results, shown in table 8, are consistent with the previously described findings for overall income level and likelihood of having income below the federal poverty level. Initially, dropping out of the labor force and receiving public assistance is associated with a lower likelihood of upward mobility, but over time those who dropped out of the labor force and received no public support find themselves in the most disadvantageous position regarding upward income mobility. However, somewhat different between this outcome measure and previously examined income-related outcomes

is that the effects of leaving the labor force or full-time employment are more persistent across all types of exits, and those effects mostly remain significant for at least four years following the baseline. For other outcomes, however, the effects are primarily observable just at the first follow-up interview after the baseline and weaken substantially thereafter.¹⁷ However, within six years following the baseline, the magnitude of the negative impact of transitioning out of labor force and full-time employment is the largest for those who dropped out of the labor force without retiring and who do not receive any public transfers.

TABLE 8

Logistic Regression of Change in Income Quartiles and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

Labor force status (ref. In labor force/full time)	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Part time				0.54*	0.74	0.59
Unemployed				0.63+	0.40**	0.25***
Retired	0.46**	0.36***	0.81	0.32**	0.33*	0.78
Out of labor force, receiving public transfer	0.31***	0.52**	0.57*	0.17***	0.39**	0.36+
Out of labor force, not receiving public transfer	0.59***	0.44***	0.45***	0.35***	0.23***	0.20***

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Discussion

Since the mid-1980s, the number of SSDI beneficiaries has increased threefold. And until recently, the reserves in the SSDI trust fund were projected to be exhausted in 2016. Congress acted in 2015 to extend the SSDI reserve depletion date to 2022. Against this backdrop, much of the academic literature relating to disability policy has focused on understanding the growth in SSDI. Research largely focused on estimating to what degree the availability of SSDI benefits encourages workers to leave the labor force. For example, Maestas, Mullen, and Strand (2013) compare SSDI benefit recipients with similar nonrecipients and establish that the benefit receipt disincentivizes some work, but the impact is largely concentrated among recipients with less severe impairments and fully disappears for the most disabled recipients. French and Song (2014) find a similar negative impact of disability benefit receipt on work, although not for adults over the age of 55, college graduates, and those suffering from a mental illness. This is further confirmed by von Wachter, Song, and Manchester (2011), who find substantial work

participation among younger disability insurance applicants following a rejection of their application and no substantial work participation among older rejected applicants. Overall, however, the work disincentive attributable to SSDI appears to be modest and concentrated among a small segment of (potential) beneficiaries.

Beginning in 2011, SSDI applications and awards have dropped substantially (Smalligan and Boyens 2018), and since 2014 the total number of beneficiaries has been declining as benefit terminations have outpaced new awards (Li 2018). Although a decline in disability benefit awards (and especially applications) normally occurs as the economy expands following an economic downturn, the current decline is steeper than expected by the Social Security Administration. A confluence of various factors, including baby boomers “aging-out” of SSDI into retirement; increased stringency of the disability benefit adjudication process; and the implementation of the Affordable Care Act,¹⁸ which may have reduced incentives to use disability benefits as a path to access Medicare, has likely amplified the impact of the economic cycle. As a result, the SSDI trust fund is now expected to have reserves until 2052.

In the years in which SSDI’s finances were shaky, most policy attention focused on whether the SSDI eligibility rules and determination process were too generous, and policymakers paid relatively little attention to whether workers with new potentially disabling conditions were receiving sufficient supports. However, we know that various public supports, including disability benefits, keep many recipients from falling into poverty. SSDI keeps almost one-third of its recipients out of poverty (Council of Economic Advisers 2015), while SSI reduces the poverty rate among its beneficiaries from 63 percent to 42 percent (Bailey and Hemmeter 2015). Research suggests that public benefits can also have a long-term beneficial impact on the children of benefit recipients (Aizer et al. 2016). This implies that failing to provide benefits to qualified disabled workers could have substantial negative implications on well-being across generations.

Our analysis finds that a significant share of workers who report a work-limiting health condition or serious health shock leave the labor force and do not rely on public social insurance or income assistance programs. In the first interview in which a worker reported a new work-limiting health condition, 10.6 percent of those who left the labor force without retiring report receiving no public cash transfer, while 5.3 percent report receiving benefits. By the third interview, however, the situation reverses: 14.6 percent of workers have left the labor force and are receiving a public benefit, while 6.8 percent have left the labor force and receive no public benefit. Those not receiving assistance are more likely to be women, to be people of color, and already have lower incomes. A caveat in these results is that the period under study includes the years of the Great Recession (as well as the years of the

preceding peak of the economic cycle and a part of the subsequent recovery). Because disability applications increase faster than benefit awards during economic downturns, and because many of those who are initially denied benefits do not attempt to return to the labor market but reapply for disability benefits (French and Song 2014), it is possible that some people who would at different stages of the economic cycle remain in the labor force, even if unemployed or underemployed, leave the labor force altogether. Therefore, the share of newly disabled workers who drop out of the labor force without receiving public benefits may be somewhat higher than it would have been absent the recession.

These newly jobless workers without public support are on average somewhat better off than those who receive a public transfer, but their economic status worsens over time. We find that around 20 percent of workers with a new work-limiting health condition leave the labor force, receive a public benefit, and have income below the federal poverty level, and this rate is fairly stable across the three interviews. In contrast, about 15 percent of workers who leave the labor force following a new work-limiting health condition and are not receiving a public benefit initially have income below the federal poverty level, but the rate grows to over 20 percent by the third interview. This pattern of growing economic vulnerability over time for those who leave the labor force without retiring or receiving public transfers is further confirmed by comparing them to those who receive public support, focusing on the share of each in the bottom quartile of the income distribution after leaving the labor force and their overall income mobility patterns.

Model results further confirm that although leaving full-time employment is generally associated with a negative income effect and higher likelihood of downward income mobility and falling into poverty in the short run, leaving the labor force without retiring or receiving any public transfers is the only labor force transitional path that is a consistent predictor of such negative results over a longer period (four to six years). Although variables such as job characteristics, education, race and ethnicity, and urbanicity appear to be associated with a transition out of the labor force without receiving public transfers, the most consistent predictor of this outcome, only increasing in magnitude over time, is sex. At the first interview following the onset of a new work-limiting health condition, women are almost twice as likely as men to leave full-time employment, but by the third interview after the onset, they are more than five times more likely than men to do so. Future research should examine why transitions out of the labor force without retiring or receiving public transfers following the onset of a work-limiting health condition are so highly gendered and to what extent SSDI qualifying criteria, such as those related to work history, may disproportionately negatively affect women.

More generally, further research is needed to better understand why public social insurance and safety-net programs fail to assist so many workers who experience a serious health condition. Eligibility rules for SSDI may be too restrictive to adequately protect some at-risk workers, or the determination process may be so daunting that some eligible workers don't apply. Alternatively, our six-year observation period may be too short to identify some people who will be eventually awarded SSDI benefits. Indeed, data suggest that most of the applicants who are initially denied disability benefits are approved for them within 10 years (French and Song 2014). However, the applicants' financial well-being substantially deteriorates during the appeals process, because they seldom work and earn little.

Another possibility is that at-risk workers may also need forms of income assistance other than SSDI. Most workers in the US do not have access to short-term medical leave or disability insurance. Legislation introduced in Congress would provide eligible workers with up to 12 weeks of medical leave a year. However, given data limitations, such as the lack of information on SSDI (and SSI) applications and access to and use of short-term (paid or unpaid) leave, as well as a relatively small analytic sample of workers who suffer from new health issues, we cannot evaluate these alternatives and examine the nuances of the relationship of various public policies and programs with labor force transitions for this population.

Further, our research finds that most workers who experience a new work-limiting health condition or serious health shock are successful in continuing to work. Although after six years, workers reporting a new work-limiting health condition are 21.8 percentage points more likely to leave the labor force than workers overall, and they are 23.9 percentage points less likely to work full time, 62.1 percent of these workers stay in the labor force, and 51.5 percent keep working full time. These findings could indicate that further government investment in programs to help intervene soon after a worker has a new serious illness or injury may be effective and could be especially beneficial for those who now leave the labor force and do not receive any public benefit (Smalligan and Boyens 2019). For example, Washington State has an innovative worker's compensation program that has successfully helped keep newly injured workers in the labor force. In a recent eight-year follow-up evaluation, Wickizer, Franklin, and Fulton-Kehoe (2018) found that relative to a comparable group of injured workers, workers in the program had a 30 percent reduction in workplace-based disability and a 30 percent lower rate of injured workers transitioning to SSDI. For every worker in the program who returned to work and avoided SSDI, another two workers with a condition that may not have led to receiving SSDI ultimately avoided experiencing long-term unemployment because of their work disability. However, not all groups of injured workers may be equally well positioned to benefit from such a program. Although younger and less-disabled workers appear to be capable of continued work, the same is not true of older

and more-disabled workers (Maestas, Mullen, and Strand 2013; von Wachter, Song, and Manchester 2011). This suggests that a comprehensive disability policy should combine innovative approaches to encourage work participation among injured workers, with a strengthened safety net for those whose condition prevents them from engaging in any gainful employment.

New serious health conditions put many workers at risk. Although most workers successfully manage these challenges, many others eventually leave the labor force. Those who leave the labor force often receive no public cash assistance. Our findings suggest that a fresh look at US social insurance protections and work supports is warranted. At the same time, the US can do more to help intervene with at-risk workers and help them stay in their jobs.

Appendix: Additional Tables

TABLE A.1

Prevalence of New Health Conditions, 2005–15

	2005–07	2007–09	2009–11	2011–13	2013–15
Work-limiting health condition					
In labor force	5.0	4.8	4.9	4.7	4.6
Working full time	4.7	4.2	4.5	3.8	4.2
Major health shock					
In labor force	4.2	4.7	3.8	4.8	4.4
Working full time	4.1	4.5	3.7	4.4	4.4
Minor health shock					
In labor force	8.2	8.1	7.6	8.0	7.0
Working full time	8.0	8.1	7.3	7.9	7.0

Sources: Panel Study of Income Dynamics, 2005–15; authors' calculations.

Note: Since the reference period for missing work for own illness is different from other health conditions, it is not included in this table. The results (not shown) suggest no systematic variation across the survey waves, consistent with other health indicators that are included in the table.

TABLE A.2

Multinomial Logistic Regression of Transition Out of the Labor Force and Full Time Employment within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 at Baseline, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Ref. In labor force/Full time/Part time						
New major health shock				1.09	1.26 ⁺	1.40 [*]
New minor health shock				0.84 ⁺	1.10	1.01
New work-limiting health condition				1.58 ^{***}	1.95 ^{***}	1.84 ^{***}
Missing work for own illness				0.97	1.20	1.33 [*]
Age (years)				1.00	1.00	1.02 ^{***}
Female				2.18 ^{***}	2.12 ^{***}	2.10 ^{***}
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black				0.80 ^{**}	0.91	0.86
Other				0.85 ⁺	0.85	0.86
Married/Partnered				1.05	1.00	1.05
Family network size				1.00	1.00	0.98
<i>Education (ref. Less than high school)</i>						
High school/GED				0.93	0.89	0.85
Some college				1.11	0.96	0.89
College or higher				0.98	0.93	0.87
Fair/poor self-rated health				1.16 ⁺	1.18 ⁺	1.28 [*]
Any overnight hospital stay				1.21 [*]	1.15	1.11

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
IHS (out-of-pocket health expenditures)				0.97***	0.98*	0.97**
Living in urban area				1.05	1.03	1.05
IHS (per capita household income)				0.91**	0.91+	0.93
<i>Occupation (ref. Professional)</i>						
Service				1.26***	1.25**	1.18*
Blue-collar				1.13	1.21*	1.12
Tertiary sector				1.25**	1.16+	1.15
Computer use at work				0.62***	0.70***	0.70***
Job offers pension				0.45***	0.48***	0.50***
<i>Wave (ref. 2005)</i>						
2007				2.10***	0.80***	1.06
2009				1.29**	0.69***	0.88+
2011				0.98	0.59***	
2013				1.07		
Unemployed						
New major health shock				1.68***	1.40*	1.51*
New minor health shock				0.96	1.06	1.11
New work-limiting health condition				2.67***	1.57**	1.28
Missing work for own illness				1.16	1.11	1.13
Age (years)				0.99**	1.00	1.00
Female				0.99	0.97	1.00
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black				1.62***	1.63***	1.69***
Other				1.17	1.37**	1.18
Married/Partnered				0.70***	0.69***	0.63***
Family network size				0.97**	0.96**	0.98
<i>Education (ref. Less than high school)</i>						
High school/GED				0.61***	0.64***	0.65***
Some college				0.51***	0.62***	0.55***
College or higher				0.50***	0.53***	0.47***
Fair/poor self-rated health				1.37***	1.41***	1.26+
Any overnight hospital stay				1.31*	1.39**	1.22
IHS (out-of-pocket health expenditures)				0.95***	0.94***	0.96**
Living in urban area				1.03	0.95	1.03
IHS (per capita household income)				0.85***	0.80***	0.84***
<i>Occupation (ref. Professional)</i>						
Service				1.01	1.11	1.11
Blue-collar				1.16+	1.19+	1.03
Tertiary sector				0.77***	0.67***	0.70**
Computer use at work				0.94	1.02	0.96
Job offers pension				0.48***	0.61***	0.57***
<i>Wave (ref. 2005)</i>						
2007				2.60***	0.89	0.86+
2009				1.84***	0.60***	0.59***
2011				1.30**	0.40***	

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
2013				0.93		
Retired						
New major health shock	1.33 ⁺	1.30 ⁺	1.13	1.27	1.40*	1.14
New minor health shock	1.04	1.10	1.09	1.09	1.07	0.99
New work-limiting health condition	1.89***	2.13***	1.90***	2.21***	2.39***	2.30***
Missing work for own illness	1.44*	1.35*	1.20	1.94***	1.44*	1.21
Age (years)	1.29***	1.31***	1.32***	1.28***	1.30***	1.31***
Female	1.12	1.16	1.21 ⁺	1.12	1.27*	1.29*
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black	1.16	1.20	1.08	1.35*	1.31*	1.19
Other	0.70*	0.72*	0.67*	0.84	0.75	0.66*
Married/Partnered	1.10	1.14	1.15	1.14	1.20	1.13
Family network size	0.99	0.99	0.98	0.98	0.99	0.98
<i>Education (ref. Less than high school)</i>						
High school/GED	0.96	1.00	0.92	0.88	0.91	0.80
Some college	0.96	1.02	0.95	0.88	0.94	0.82
College or higher	1.09	1.04	1.02	0.96	0.94	0.86
Fair/poor self-rated health	1.02	1.17	1.12	1.19	1.28*	1.17
Any overnight hospital stay	1.17	1.09	1.12	1.06	1.16	1.19
IHS (out-of-pocket health expenditures)	0.97 ⁺	0.97	0.99	0.94**	0.95**	0.95*
Living in urban area	0.78**	0.77**	0.87	0.73**	0.76**	0.84
IHS (per capita household income)	1.13	1.21**	1.06	1.30**	1.26**	1.18 ⁺
<i>Occupation (ref. Professional)</i>						
Service	0.99	0.95	0.99	1.03	1.03	1.05
Blue-collar	0.95	1.02	1.13	0.97	1.02	1.09
Tertiary sector	1.16	1.10	1.08	1.05	1.01	1.06
Computer use at work	0.83*	0.82*	0.86 ⁺	0.84	0.79*	0.80*
Job offers pension	1.23*	1.49***	1.66***	1.71***	1.79***	1.79***
<i>Wave (ref. 2005)</i>						
2007	1.72***	0.87 ⁺	0.98	1.77***	0.77**	0.96
2009	1.20	0.75**	0.94	1.10	0.71**	0.93
2011	1.03	0.73**		1.04	0.66***	
2013	1.10			1.14		
Out of labor force - receiving public transfer						
New major health shock	3.40***	3.38***	4.32***	3.98***	3.50***	4.93***
New minor health shock	1.29	1.69***	1.56***	1.26	1.56**	1.49**
New work-limiting health condition	8.65***	7.85***	6.08***	15.0***	10.2***	7.69***
Missing work for own illness	2.12***	2.43***	1.73**	1.98**	2.10***	1.40
Age (years)	1.02***	1.04***	1.06***	1.03***	1.05***	1.07***
Female	0.83	0.87	0.91	0.83	0.89	1.00
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black	1.13	1.28 ⁺	1.37*	1.17	1.49*	1.49*
Other	0.57*	0.48**	0.51**	0.73	0.52*	0.61*
Married/Partnered	0.76*	0.71**	0.72*	0.65*	0.65**	0.68**

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Family network size	1.02	1.01	1.02	1.03	1.01	1.02
<i>Education (ref. Less than high school)</i>						
High school/GED	0.80	0.77 ⁺	0.66 ^{**}	1.02	0.68 [*]	0.62 ^{**}
Some college	0.94	0.94	0.80	1.08	0.93	0.79
College or higher	0.61 [*]	0.50 ^{**}	0.48 ^{***}	0.81	0.49 ^{**}	0.44 ^{**}
Fair/poor self-rated health	2.74 ^{***}	3.04 ^{***}	3.39 ^{***}	3.01 ^{***}	3.16 ^{***}	3.34 ^{***}
Any overnight hospital stay	1.97 ^{***}	1.31 ⁺	1.78 ^{***}	2.18 ^{**}	1.64 [*]	2.11 ^{***}
IHS (out-of-pocket health expenditures)	0.95 [*]	0.97	0.98	0.94 [*]	0.96	0.98
Living in urban area	1.00	0.89	0.88	1.03	0.80	0.78 ⁺
IHS (per capita household income)	0.91 ^{**}	0.88 ^{***}	0.90 ^{**}	0.88 ^{**}	0.81 ^{***}	0.86 [*]
<i>Occupation (ref. Professional)</i>						
Service	1.26	1.73 ^{***}	1.71 ^{***}	1.09	1.94 ^{***}	1.78 ^{***}
Blue-collar	1.18	1.47 [*]	1.74 ^{***}	1.11	1.73 [*]	1.76 ^{**}
Tertiary sector	1.09	0.86	0.88	0.97	0.84	0.88
Computer use at work	0.59 ^{***}	0.59 ^{***}	0.66 ^{***}	0.55 ^{***}	0.66 ^{**}	0.67 ^{**}
Job offers pension	0.59 ^{***}	0.93	0.84	0.62 ^{**}	0.98	0.77 [*]
<i>Wave (ref. 2005)</i>						
2007	1.94 ^{***}	1.19	1.13	2.97 ^{***}	1.08	1.20 ⁺
2009	1.62 [*]	1.03	1.03	1.88 [*]	0.94	1.04
2011	1.68 ^{**}	1.17		2.01 [*]	1.01	
2013	1.79 ^{**}			2.30 ^{**}		
Out of labor force - not receiving public transfer						
New major health shock	2.08 ^{***}	1.94 ^{***}	1.47 ^{**}	2.61 ^{***}	2.28 ^{***}	2.00 ^{***}
New minor health shock	1.36 ^{***}	1.06	1.02	1.27 [*]	1.08	0.83
New work-limiting health condition	3.82 ^{***}	2.51 ^{***}	1.87 ^{***}	5.45 ^{***}	3.11 ^{***}	2.36 ^{***}
Missing work for own illness	1.48 ^{***}	1.30 [*]	1.32 [*]	1.61 ^{***}	1.40 [*]	1.24
Age (years)	0.98 ^{***}	0.98 ^{***}	0.99 ^{***}	0.97 ^{***}	0.98 ^{***}	0.98 ^{***}
Female	3.99 ^{***}	4.64 ^{***}	4.86 ^{***}	4.23 ^{***}	4.97 ^{***}	5.45 ^{***}
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black	0.92	0.90	0.87	1.10	0.91	0.99
Other	0.97	1.03	1.04	0.94	1.12	1.17
Married/Partnered	1.89 ^{***}	1.68 ^{***}	1.67 ^{***}	1.74 ^{***}	1.54 ^{***}	1.58 ^{***}
Family network size	1.00	1.00	1.01	1.01	1.00	1.02
<i>Education (ref. Less than high school)</i>						
High school/GED	0.99	0.97	0.93	0.83 ⁺	0.91	0.93
Some college	0.94	0.91	0.95	0.82 ⁺	0.95	1.03
College or higher	0.90	0.88	0.93	0.78 ⁺	0.87	0.95
Fair/poor self-rated health	1.26 ^{**}	1.42 ^{***}	1.45 ^{***}	1.25 [*]	1.56 ^{***}	1.78 ^{***}
Any overnight hospital stay	1.24 ^{**}	1.13	0.97	1.41 ^{**}	1.14	1.18
IHS (out-of-pocket health expenditures)	0.97 ^{***}	0.99	0.98	0.95 ^{***}	0.96 ^{**}	0.97 ⁺
Living in urban area	0.95	1.02	0.96	1.00	1.08	0.98
IHS (per capita household income)	0.91 ^{***}	0.93 ^{**}	0.93 [*]	0.88 ^{**}	0.82 ^{***}	0.86 ^{**}
<i>Occupation (ref. Professional)</i>						
Service	1.14 [*]	1.10	1.20 [*]	1.26 ^{**}	1.16	1.21 ⁺

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Blue-collar	1.11	1.25*	1.26 ⁺	1.34*	1.44**	1.34 ⁺
Tertiary sector	1.05	1.15	1.11	0.99	1.08	1.05
Computer use at work	0.71***	0.68***	0.76***	0.80**	0.77**	0.79*
Job offers pension	0.42***	0.45***	0.46***	0.52***	0.53***	0.53***
Wave (ref. 2005)						
2007	1.32***	1.06	1.00	1.65***	0.92	0.95
2009	1.16*	0.96	0.91	1.23 ⁺	0.79*	0.87
2011	1.10	0.88 ⁺		0.98	0.65***	
2013	1.06			1.02		
N	40985	30431	21697	32189	23890	17112
pseudo R ²	0.184	0.220	0.249	0.126	0.145	0.170
χ^2	3338.8	3284.4	2680.6	4068.8	3376.7	2596.7

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: IHS - inverse hyperbolic sign transformed.

⁺ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

TABLE A.3

Multinomial Logistic Regression of Transition Out of the Labor Force and Full Time Employment within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Ref. In labor force/Full time						
Part time						
Age (years)				1.00	1.01	1.02
Female				1.74*	1.78*	1.93*
Race and ethnicity (ref. Non-Hispanic white)						
Non-Hispanic black				1.10	0.83	0.80
Other				1.16	1.21	1.51
Married/Partnered				1.56	1.07	2.50*
Family network size				1.06	1.06	1.03
Education (ref. Less than high school)						
High school/GED				1.35	0.75	0.75
Some college				1.50	0.77	0.67
College or higher				1.31	0.96	0.62
Fair/poor self-rated health				1.03	0.70	0.70
Any overnight hospital stay				1.33	1.07	1.25
IHS (out-of-pocket health expenditures)				0.92 ⁺	0.91*	0.98
Living in urban area				0.69	1.03	1.26
IHS (per capita household income)				0.86	0.95	0.85
Occupation (ref. Professional)						
Service				0.82	1.39	0.95
Blue-collar				0.89	2.07 ⁺	1.18

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Tertiary sector				1.30	1.40	1.38
Computer use at work				0.40***	0.75	0.79
Job offers pension				0.43***	0.55*	0.45*
Wave (ref. 2005)						
2007				5.67***	0.89	1.36
2009				3.50**	0.95	1.17
2011				1.37	0.81	
2013				3.06**		
Unemployed						
Age (years)				1.00	0.99	1.00
Female				1.26	0.77	0.83
Race and ethnicity (ref. Non-Hispanic white)						
Non-Hispanic black				1.16	1.19	1.10
Other				0.63	1.19	0.36
Married/Partnered				0.66+	0.39**	1.03
Family network size				0.94	0.93	0.94
Education (ref. Less than high school)						
High school/GED				0.52*	0.49	0.58
Some college				0.45*	0.46	0.72
College or higher				0.52+	0.65	0.89
Fair/poor self-rated health				0.97	1.11	0.83
Any overnight hospital stay				1.08	1.49	1.60
IHS (out-of-pocket health expenditures)				0.93+	0.95	1.11
Living in urban area				0.88	0.82	1.46
IHS (per capita household income)				0.65**	0.76	0.32***
Occupation (ref. Professional)						
Service				0.77	0.64	0.89
Blue-collar				1.23	0.60	1.01
Tertiary sector				0.88	0.69	0.43
Computer use at work				0.66	0.50*	0.69
Job offers pension				0.46**	0.78	0.47
Wave (ref. 2005)						
2007				2.19*	2.84*	1.57
2009				2.18*	1.95	1.42
2011				2.13*	1.16	
2013				0.88		
Retired						
Age (years)	1.24***	1.32***	1.30***	1.22***	1.29***	1.29***
Female	0.86	0.77	1.04	0.87	0.65	1.08
Race and ethnicity (ref. Non-Hispanic white)						
Non-Hispanic black	1.43	1.68	1.69	1.72	1.84	1.11
Other	0.28**	1.44	1.61	0.40+	2.07+	1.25
Married/Partnered	0.99	0.90	0.87	0.90	0.90	0.99
Family network size	0.98	1.01	1.01	0.96	0.99	1.02

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
<i>Education (ref. Less than high school)</i>						
High school/GED	0.62	1.12	0.97	0.62	1.12	0.99
Some college	0.62	2.16 ⁺	1.77	0.70	2.08	1.97
College or higher	0.55	1.34	1.34	0.51	1.26	1.29
Fair/poor self-rated health	1.05	0.89	1.12	1.54	0.93	1.07
Any overnight hospital stay	1.95 ⁺	1.25	0.74	2.08 ⁺	1.73	1.00
IHS (out-of-pocket health expenditures)	0.89 [*]	0.95	0.93	0.86 [*]	0.93	0.94
Living in urban area	0.79	0.84	0.77	0.55 ⁺	0.85	0.94
IHS (per capita household income)	0.82 [*]	1.20	1.22	0.87	1.37	0.89
<i>Occupation (ref. Professional)</i>						
Service	1.34	1.19	0.90	0.77	0.98	0.85
Blue-collar	2.09 ⁺	1.59	1.55	1.64	1.26	1.32
Tertiary sector	1.99 ⁺	1.27	1.16	1.98	1.47	1.32
Computer use at work	1.06	1.10	1.16	0.73	0.84	1.09
Job offers pension	2.43 ^{**}	1.39	1.75 [*]	2.70 ^{**}	1.43	1.48
<i>Wave (ref. 2005)</i>						
2007	2.00	0.88	0.76	3.02 [*]	0.99	0.88
2009	1.67	0.67	0.66	1.94	0.76	1.03
2011	0.99	0.58		1.52	0.72	
2013	1.06			1.35		
Out of labor force - receiving public transfer						
Age (years)	1.06 ^{***}	1.06 ^{***}	1.07 ^{***}	1.07 ^{***}	1.06 ^{***}	1.09 ^{***}
Female	0.56 [*]	0.77	0.89	0.89	0.77	0.87
<i>Race and ethnicity (ref. Non-Hispanic white)</i>						
Non-Hispanic black	2.04 ^{**}	1.95 ^{**}	2.52 ^{***}	1.90 [*]	2.18 ^{**}	2.01 [*]
Other	0.32 [*]	0.69	0.80	0.29 ⁺	0.72	0.71
Married/Partnered	0.67 ⁺	0.69 ⁺	0.62 [*]	0.74	0.55 [*]	0.65
Family network size	1.03	1.00	1.00	1.06	1.00	1.02
<i>Education (ref. Less than high school)</i>						
High school/GED	1.22	0.74	0.63 ⁺	1.03	0.46 [*]	0.59
Some college	1.23	1.17	1.20	0.99	0.80	1.49
College or higher	0.69	0.38 ^{**}	0.47 ⁺	0.73	0.26 ^{**}	0.62
Fair/poor self-rated health	2.03 ^{***}	1.72 ^{**}	1.67 [*]	1.91 [*]	1.49	1.38
Any overnight hospital stay	0.87	0.83	1.40	0.99	1.13	2.01 [*]
IHS (out-of-pocket health expenditures)	0.97	0.95	0.97	0.92 ⁺	0.92 ⁺	0.95
Living in urban area	0.76	0.78	0.68 ⁺	0.77	0.75	0.70
IHS (per capita household income)	0.90	0.90	1.04	0.68 [*]	0.97	0.74
<i>Occupation (ref. Professional)</i>						
Service	1.20	1.77 [*]	1.32	0.99	1.65	1.18
Blue-collar	1.02	1.68 ⁺	2.51 ^{**}	1.29	2.20 [*]	2.89 ^{**}
Tertiary sector	0.67	0.61 ⁺	0.98	0.60	0.71	1.18
Computer use at work	0.53 [*]	0.66 ⁺	0.51 ^{**}	0.50 [*]	0.57 [*]	0.40 ^{**}
Job offers pension	0.87	1.19	1.07	0.74	0.93	0.68
<i>Wave (ref. 2005)</i>						
2007	2.26 [*]	1.31	1.16	4.47 ^{***}	1.55	1.38

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
2009	1.29	1.13	0.96	1.99	1.60	1.36
2011	1.78 ⁺	1.18		3.43**	1.69	
2013	2.16*			3.19**		
Out of labor force - not receiving public transfer						
Age (years)	1.02*	1.01	1.01	1.03**	1.01	0.99
Female	2.16***	2.84***	4.29***	1.96**	2.84***	5.44***
<i>Race and ethnicity (ref. Non- Hispanic white)</i>						
Non-Hispanic black	1.50*	1.70*	1.18	1.88**	1.58	0.92
Other	0.93	1.96*	1.34	1.08	2.82**	1.71
Married/Partnered	1.21	1.44 ⁺	1.23	1.04	1.29	1.07
Family network size	1.01	0.96	1.00	0.99	1.01	1.06
<i>Education (ref. Less than high school)</i>						
High school/GED	1.06	1.47	0.88	0.68	0.91	0.71
Some college	1.07	1.20	1.36	0.68	0.95	1.67
College or higher	0.64 ⁺	0.89	0.88	0.33**	0.68	1.12
Fair/poor self-rated health	1.12	1.07	1.11	0.98	1.06	1.43
Any overnight hospital stay	1.17	1.15	1.33	1.47	1.18	2.37 ⁺
IHS (out-of-pocket health expenditures)	0.96 ⁺	0.98	0.90*	0.93*	0.94	0.84**
Living in urban area	0.57***	0.81	0.77	0.54**	0.81	0.84
IHS (per capita household income)	0.87 ⁺	1.09	1.15	0.65**	1.14	1.65
<i>Occupation (ref. Professional)</i>						
Service	1.48*	0.91	1.01	1.21	0.78	0.95
Blue-collar	2.18***	1.51	1.47	2.30**	1.29	2.59*
Tertiary sector	0.86	1.35	0.71	1.19	1.21	1.00
Computer use at work	0.99	0.61*	0.75	1.07	0.53*	0.67
Job offers pension	0.70*	0.43***	0.76	0.69 ⁺	0.42**	0.90
<i>Wave (ref. 2005)</i>						
2007	1.34	1.42	1.73 ⁺	2.40**	1.82 ⁺	1.96 ⁺
2009	1.07	1.43	2.25**	1.23	1.61	2.20 ⁺
2011	1.13	1.40		1.51	1.57	
2013	1.45 ⁺			1.78*		
N	1849	1374	990	1326	975	709
pseudo R²	0.142	0.187	0.214	0.147	0.163	0.204
χ²	318.2	309.2	274.0	420.7	357.3	333.2

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: IHS - inverse hyperbolic sign transformed.

⁺ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

TABLE A.4

Logistic Regression of Falling Below Federal Poverty Level and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Labor force status (ref. In labor force/Full time)						
Part time				5.31***	1.65	2.51 ⁺
Unemployed				5.25***	2.56*	3.57*
Retired	2.17	1.51	1.90	5.91**	1.07	2.03
Out of labor force - receiving public transfer	6.75***	2.29*	1.22	17.3***	2.96*	2.50
Out of labor force - not receiving public transfer	2.61***	2.53***	2.18*	6.50***	3.71***	3.08*
Age (years)	0.97***	0.97**	0.96**	0.96**	0.97*	0.97⁺
Female	0.78	0.95	0.65	0.85	1.08	0.59
Race and ethnicity (ref. Non- Hispanic white)						
Non-Hispanic black	1.14	2.07**	1.47	1.02	1.63	1.47
Other	1.01	1.76 ⁺	1.23	0.84	1.74	1.26
Married/Partnered	0.34***	0.39***	0.38**	0.39**	0.58⁺	0.41*
Family network size	0.99	1.00	1.02	0.98	0.98	0.97
Education (ref. Less than high school)						
High school/GED	0.73	0.62 ⁺	0.62 ⁺	0.93	0.63	0.57
Some college	0.33***	0.50*	0.70	0.40*	0.54	0.79
College or higher	0.30*	0.36*	0.61	0.45	0.33*	0.67
Fair/poor self-rated health	1.12	1.23	1.43	1.25	1.38	1.62
Any overnight hospital stay	0.81	0.76	0.50	0.97	0.94	0.71
IHS (out-of-pocket health expenditures)	0.92**	0.93*	0.98	0.87***	0.91*	0.98
Living in urban area	1.03	0.75	0.67	0.85	0.79	0.59
Per capita income quartile (ref. Lowest)						
Second	0.48**	0.83	0.79	0.60	1.01	0.70
Third	0.35**	0.53 ⁺	0.39*	0.48 ⁺	0.58	0.49
Highest	0.18***	0.11***	0.22**	0.26*	0.11**	0.23*
Occupation (ref. Professional)	1	1	1	1	1	1
Service	1.52	1.01	1.00	1.52	1.19	1.07
Blue-collar	1.99 ⁺	1.06	0.83	2.28 ⁺	1.14	1.04
Tertiary sector	1.21	0.99	0.92	1.19	1.02	1.19
Computer use at work	0.73	0.85	0.34**	0.75	0.84	0.32*

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Job offers pension	0.32***	0.74	0.59 ⁺	0.38**	0.81	0.47*
Wave (ref. 2005)						
2007	1.09	2.28**	1.07	0.94	2.08*	1.14
2009	1.33	1.87*	0.74	1.06	1.72	0.70
2011	1.24	2.26**		1.29	2.05 ⁺	
2013	0.57			0.57		
N	1646	1233	892	1253	925	672
χ²	204.8	119.7	119.1	190.5	93.9	101.5

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Note:

⁺ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

TABLE A.5

Linear Regression of Income and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Labor force status (ref. In labor force/Full time)						
Part time				-0.23**	-0.044	-0.018
Unemployed				-0.64**	-0.28*	-0.30*
Retired	-0.048	-0.032	0.021	-0.22*	-0.12	-0.040
Out of labor force - receiving public transfer	-0.28**	-0.090	-0.37	-0.43***	-0.29*	-0.66
Out of labor force - not receiving public transfer	-0.22*	-0.42***	-0.58***	-0.26**	-0.47***	-0.36**
Age (years)	0.0015	-0.0028	0.00017	0.0031	-0.0022	0.00055
Female	0.095	0.15⁺	0.16	0.056	-0.067	0.012
Race and ethnicity (ref. Non-Hispanic white)						
Non-Hispanic black	-0.28***	-0.33***	-0.25*	-0.21***	-0.28***	-0.25*
Other	-0.046	-0.18	-0.041	-0.11	-0.13 ⁺	-0.032
Married/Partnered	0.50***	0.47***	0.36**	0.35***	0.24**	0.23*
Family network size	0.020*	0.019⁺	0.0053	0.016	0.016⁺	0.010
Education (ref. Less than high school)						
High school/GED	0.26 ⁺	0.14	0.18	0.069	0.21 ⁺	0.27*
Some college	0.36*	0.36**	0.41**	0.18	0.35**	0.37**
College or higher	0.49**	0.49**	0.31 ⁺	0.19	0.55***	0.36*
Fair/poor self-rated health	-0.058	-0.075	-0.16	-0.17⁺	-0.0035	-0.18

Any overnight hospital stay	-0.064	0.018	0.049	-0.0097	0.051	0.14
IHS (out-of-pocket health expenditures)	0.042**	0.066***	0.079***	0.032**	0.044**	0.040*
Living in urban area	0.12 ⁺	0.23*	0.19	0.11 ⁺	0.23 ⁺	0.18
Per capita income quartile (ref. Lowest)						
Second	0.63***	0.31**	0.097	0.50***	0.15	0.077
Third	0.77***	0.59***	0.47***	0.71***	0.45***	0.43**
Highest	1.28***	0.98***	0.84***	1.20***	0.84***	0.79***
Occupation (ref. Professional)						
Service	-0.037	-0.069	-0.075	-0.14*	-0.071	-0.011
Blue-collar	-0.030	-0.0056	0.015	-0.16 ⁺	-0.23*	-0.13
Tertiary sector	-0.089	-0.038	-0.017	-0.034	-0.084	-0.13
Computer use at work	0.25***	0.090	0.28*	0.17**	-0.061	0.23
Job offers pension	0.22***	0.12*	0.051	0.12*	0.060	0.092
Wave (ref. 2005)						
2007	0.092	-0.072	-0.071	0.054	-0.090	-0.24
2009	0.036	-0.31**	0.029	0.065	-0.19	0.058
2011	0.020	-0.17 ⁺		0.055	-0.16*	
2013	0.14			0.043		
Constant	9.09***	9.56***	9.45***	9.76***	10.3***	10.0***
N	1849	1379	992	1326	979	710
χ ²	1334.1	736.4	470.1	1245.3	843.5	473.0

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes:

⁺ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

TABLE A.6

Logistic Regression of Change in Income Quartiles and the Type of Labor Force Transition within Two, Four, and Six Years Following the Baseline for Adults Ages 18–62 and in the Labor Force or Working Full Time at Baseline Who Subsequently Had a New Work-Limiting Health Condition, 2005–15

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Labor force status (ref. In labor force/Full time)						
Part time				0.54*	0.74	0.59
Unemployed				0.63 ⁺	0.40**	0.25***
Retired	0.46**	0.36***	0.81	0.32**	0.33*	0.78
Out of labor force - receiving public transfer	0.31***	0.52**	0.57*	0.17***	0.39**	0.36 ⁺
Out of labor force - not receiving public transfer	0.59***	0.44***	0.45***	0.35***	0.23***	0.20***
Age (years)	1.01 ⁺	1	1	1.02*	1	1

	In labor force (t+2)	In labor force (t+4)	In labor force (t+6)	Full time (t+2)	Full time (t+4)	Full time (t+6)
Female	1.24*	1.16	1.07	1.19	0.94	1
Race and ethnicity (ref. Non-Hispanic white)						
Non-Hispanic black	0.85	0.55***	0.78	0.87	0.48**	0.72
Other	0.9	0.64*	1.31	0.91	0.57*	1.54
Married/Partnered	1.67***	1.50**	1.18	2.17***	1.76**	1.25
Family network size	1.01	1.02	1	1.03	1.04	1
Education (ref. Less than high school)						
High school/GED	1.28+	1.45*	2.02**	1.18	1.44	3.73***
Some college	1.50*	1.57*	1.96*	1.67*	2.19**	3.35**
College or higher	1.92**	1.79*	2.72**	2.28**	2.73**	7.04***
Fair/poor self-rated health	0.92	0.89	0.69*	0.8	0.91	0.54*
Any overnight hospital stay	1.05	1.11	0.94	1.29	1.2	0.92
IHS (out-of-pocket health expenditures)	1.03	1.03	1.06*	1.05+	1.05	1.12**
Living in urban area	0.99	1.12	1.12	1.01	1.32	1.29
IHS (per capita household income)	0.43***	0.40***	0.38**	0.20***	0.18***	0.10***
Occupation (ref. Professional)						
Service	0.74*	0.81	0.93	0.62*	0.68+	0.77
Blue-collar	0.63**	0.62**	0.65*	0.52**	0.48**	0.49*
Tertiary sector	0.83	1.05	0.93	0.78	0.92	0.77
Computer use at work	1.36**	1.11	1.13	1.37+	1.09	1.03
Job offers pension	1.05	1.15	1.1	1.23	1.19	1.26
Wave (ref. 2005)						
2007	0.93	1	1.02	0.93	0.96	0.9
2009	0.98	0.93	1.17	1.06	0.98	1.16
2011	0.95	0.85		0.84	0.73	
2013	0.77+			0.69+		
N	1849	1379	992	1326	979	710
χ^2	129.9	106	44.2	85.5	67.7	59

Sources: Panel Study of Income Dynamics, 2005–15; authors' estimates.

Notes: IHS - inverse hyperbolic sign transformed.

+ p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Notes

- ¹ People who report a work-limiting health condition at a certain wave and did not report such a condition in the preceding wave are considered to have experienced a new work-limiting health condition. People who indicated that their condition presents no limitation in the type of work and little limitation in the amount of work that they can do are not counted as experiencing a work-limiting health condition.
- ² People who report a major health shock has occurred within three years of a survey wave and have not reported such health shock in the preceding wave are considered to have experienced a new major health shock. Conditions considered a major health shock are heart attack; stroke; heart disease, angina, or congestive heart failure; chronic lung disease such as bronchitis or emphysema; cancer or malignant tumor; permanent loss of memory or mental ability; and emotional, nervous, or psychiatric problems.
- ³ Although we focus primarily on the analysis of new work-limiting health conditions and, to a somewhat lesser extent, new major health shocks, we also repeated the analysis for the subsamples of workers who experienced a new minor health shock (hypertension, diabetes, or arthritis) or who reported missing work because of their own illness for a minimum of three weeks in the year preceding the interview year. They include 3,345 and 2,004 people, respectively.
- ⁴ The analytic samples in the multivariate analysis are somewhat smaller because of missing observations for different variables included in the models. For example, the analytic sample of adults ages 18 to 62 who were in the labor force at baseline includes 40,985 observations, and the samples conditioned on experiencing new work-limiting health condition or major health shock include 1,849 and 1,687 observations, respectively. The descriptive results limited to sample members with nonmissing information on all model covariates remain consistent, and we find no evidence that observations with missing information on some model covariates are systematically different from those with strictly nonmissing information.
- ⁵ An overwhelming majority of transfer recipients receive SSDI or SSI, programs of particular interest to us given their link with disability status. However, recipients of other public cash transfers were added to this category to greater distinguish people who receive public transfers from those who do not. Excluding recipients of public transfers other than SSDI or SSI benefits from the analysis does not have substantial impact on our findings.
- ⁶ Because of their skewed distribution, income and health expenditure values are transformed using the IHS. Results for IHS net transfers are comparable to log-transformed values (Burbidge, Magee, and Robb 1988), but the former have the advantage of being defined for zero and negative values. This transformation has been increasingly used in the literature as an alternative to log transformation (e.g., Gale, Gelfond, and Fichtner 2019; Georgarakos and Pasini 2011; Mudrazija, 2014, 2016; Pence 2006; Thompson and Suarez 2015).
- ⁷ We use constant 2015 dollar values of income and health expenditures in all analyses.
- ⁸ On average, a total of about 4.2 percent of adults ages 18 to 62 who are in the labor force, report developing a new work-limiting health condition or experiencing a new major health shock.
- ⁹ Although older workers in our sample, especially if over the age of 50, are much more likely to suffer from health issues than their younger peers, about 30 percent of those with a new work-limiting health condition and almost 34 percent of those with a new major health shock are younger than 40. Compared with the overall age distribution of adults in the labor force, those with a new work-limiting health condition are almost 28 percent less likely to be younger than 40, and they are 44 percent more likely to be older than 50. Although the magnitude of differences is somewhat more moderate, similar age patterns can be observed for those with a new major health shock.
- ¹⁰ Because the study period (2005–15) includes the Great Recession, we must examine whether the reporting of new work-limiting health conditions spiked during the downturn, which could have happened, for example, if people who were laid off systematically overreported such new health conditions because of changing

perceptions about their ability to work. However, table A1 suggests no systematic fluctuation in this variable during the recession compared with before and after the recession.

¹¹ The trends observed for full-time workers who were diagnosed with a new major health shock are very similar to those described for full-time workers who had a new work-limiting health condition.

¹² The results for those transitioning out of the labor force more generally closely resemble those shown in figure 3 for workers transitioning out of full-time employment.

¹³ Income distribution is determined using total family income information for all heads of household and spouses age 16 and older in each of the six Panel Study of Income Dynamics waves included in the analysis.

¹⁴ Detailed model results for all types of transitions out of the labor force and full-time employment are available in table A3.

¹⁵ Full model results are available in table A4.

¹⁶ Full model results are available in table A5.

¹⁷ Full model results are available in table A6.

¹⁸ The impact of the Affordable Care Act on disability rolls is still unclear due to the short time that has passed since its implementation. Taken together with the SSDI and Medicare eligibility rules, some of its features may encourage while other discourage SSDI applications (Li 2018). In the context of this research, however, the Affordable Care Act should not play an important role as its implementation only marginally overlaps with the study period.

References

- Aizer, Anna, Shari Eli, Joseph Ferrie, and Adriana Lleras-Muney. 2016. "The Long-Run Impact of Cash Transfers to Poor Families." *American Economic Review* 106 (4): 935–71.
- Autor, David H., and Mark G. Duggan. 2003. "The Rise in the Disability Rolls and the Decline in Unemployment." *The Quarterly Journal of Economics* 118 (1): 157–206.
- Bailey, Michelle Stegman, and Jeffrey Hemmeter. 2015. "Characteristics of Noninstitutionalized DI and SSI Program Participants, 2013 Update." Washington, DC: Social Security Administration.
- Burbidge, John B., Lonnie Magee, and A. Leslie Robb. 1988. "Alternative Transformations to Handle Ex-treme Values of the Dependent Variable." *Journal of the American Statistical Association* 83 (401): 123–27.
- Burkhauser, Richard V., and Mary C. Daly. 1996. "Employment and Economic Well-Being Following the Onset of a Disability." In *Disability, Work and Cash Benefits*, edited by Jerry L. Mashaw, Virginia P. Reno, Richard V. Burkhauser, and Monroe Berkowitz, 59–101. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Burkhauser, Richard V., Andrew J. Houtenville, and Jennifer R. Tennant. 2013. "Measuring the Population with Disabilities for Policy Analysis." In *Lifecycle Events and Their Consequences: Job Loss, Family Change, and Declines in Health*, edited by Kenneth A. Couch, Mary C. Daly, and Julie Zissimopoulos, 240–59. Stanford, CA: Stanford University Press.
- Council of Economic Advisers. 2015. "Social Security Disability Insurance: A Lifeline for American Workers and Families." Washington, DC: White House Council of Economic Advisers.
- Cutler, David M., Ellen Meara, and Seth Richards-Shubik. 2011. "Health Shocks and Disability Transitions among Near-Elderly Workers." Working paper 11-08. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- French, Eric, and Jae Song. 2014. "The Effect of Disability Insurance Receipt on Labor Supply." *American Economic Journal: Economic Policy* 6 (2): 291–337.
- Gale, William G., Hilary Gelfond, and Jason Fichtner. 2019. "How Will Retirement Saving Change by 2050? Prospects for the Millennial Generation." Washington, DC: Brookings Institution.
- Georgarakos, Dimitris, and Giacomo Pasini. 2011. "Trust, Sociability, and Stock Market Participation." *Review of Finance* 15 (4): 693–725.
- Haveman, Robert. 2013. "Health Shocks: A Discussion." In *Lifecycle Events and Their Consequences: Job Loss, Family Change, and Declines in Health*, edited by Kenneth A. Couch, Mary C. Daly, and Julie Zissimopoulos, 240–59. Stanford, CA: Stanford University Press.
- Hyde, Jody Schimmel, and April Yanyuan Wu. 2019. "New Work-Limiting Health Events and Occupational Transitions Among Older Workers." Working paper 2019-01. Washington, DC: Mathematica Policy Research.
- Jolly, Nicholas A. 2013. "The Impact of Work-Limiting Disabilities on Earnings and Income Mobility." *Applied Economics* 45 (36): 5104–18.
- Lauer, Eric A., and Andrew J. Houtenville. 2019. "Annual Disability Statistics Compendium: 2018." Durham: University of New Hampshire, Institute on Disability. https://disabilitycompendium.org/sites/default/files/user-uploads/2018_Compendium_Accessible_AbobeReaderFriendly.pdf.
- Li, Zhe. 2018. "Trends in Social Security Disability Insurance Enrollment." Washington, DC: Congressional Research Service.

- Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand. 2013. "Does Disability Insurance Receipt Discourage Work? Using Examiner Assignment to Estimate Causal Effects of SSDI Receipt." *American Economic Review* 103 (5): 1797–829.
- Meyer, Bruce D., and Wallace K.C. Mok. 2013a. "Disability, Earnings, Income and Consumption." Working paper 18869. Cambridge, MA: National Bureau of Economic Research.
- Meyer, Bruce D., and Wallace K.C. Mok. 2013b. "The Economic Consequences of Disability: Evidence from the PSID." In *Lifecycle Events and Their Consequences: Job Loss, Family Change, and Declines in Health*, edited by Kenneth A. Couch, Mary C. Daly, and Julie Zissimopoulos, 240–59. Stanford, CA: Stanford University Press.
- Meyer, Bruce D., and Wallace K.C. Mok. 2018. "Disability, Taxes, Transfers, and the Economic Well-Being of Women." *Tax Policy and the Economy* 32: 211–53.
- Mudrazija, Stipica. 2014. "The Balance of Intergenerational Family Transfers: A Life-Cycle Perspective." *European Journal of Ageing* 11 (3): 249–59.
- Mudrazija, Stipica. 2016. "Public Transfers and the Balance of Intergenerational Family Support in Europe." *European Societies* 18 (4): 336–58.
- Pence, Karen M. 2006. "The Role of Wealth Transformations: An Application to Estimating the Effect of Tax Incentives on Saving." *Contributions to Economic Analysis and Policy* 5 (1): 1–24.
- Smalligan, Jack, and Chantel Boyens. 2018. "A Stronger Social Security Disability Insurance Program Opens the Door for Early Intervention." Washington, DC: Urban Institute.
- Smalligan, Jack, and Chantel Boyens. 2019. "Supporting Employment for Newly Ill and Injured Workers: Evidence on Early Intervention." Washington, DC: Urban Institute.
- Thompson, Jeffrey P., and Gustavo A. Suarez. 2015. "Exploring the Racial Wealth Gap Using the Survey of Consumer Finances." Finance and Economics Discussion Series 2015-076. Washington, DC: Board of Governors of the Federal Reserve System.
- von Wachter, Till, Jae Song, and Joyce Manchester. 2011. "Trends in Employment and Earnings of Allowed and Rejected Applicants to the Social Security Disability Insurance Program." *American Economic Review* 101 (7): 3308–29.
- Wickizer, Thomas, Gary Franklin, and Deborah Fulton-Kehoe. 2018. "Innovations in Occupational Health Care Delivery Can Prevent Entry into Permanent Disability: 8-Year Follow Up of the Washington State Centers for Occupational Health and Education." *Medical Care* 56 (12): 1018–23.

About the Authors

Stipica Mudrazija is a senior research associate in the Income and Benefits Policy Center at the Urban Institute, where he studies issues related to population, aging, retirement, intergenerational support, and long-term services and supports for older adults.

Prior to joining the Urban Institute, Dr. Mudrazija was a postdoctoral scholar at the Edward R. Roybal Institute on Aging at the University of Southern California. Previously, Dr. Mudrazija worked as a junior analyst in the research department of the Croatian National Bank. He was also a trainee in the Social Protection unit of the European Commission's Directorate-General for Employment, Social Affairs and Inclusion as well as a graduate research intern in the Center on Budget and Policy Priorities. His research on intergenerational support, retirement security, long-term services and supports, economic and health disparities, and immigration has been published in peer-reviewed journals and edited volumes.

Mudrazija holds a bachelor's degree in economics from the University of Zagreb, a master's degree in public policy from Georgetown University, and a doctorate in public policy from The University of Texas at Austin.

Jack Smalligan is a senior policy fellow in the Income and Benefits Policy Center at the Urban Institute. He analyzes the interactions across disability, retirement, and paid leave policy. Previously, he was deputy associate director at the Office of Management and Budget.

As director of the Education, Income Maintenance, and Labor Division, Smalligan was responsible for oversight and analysis of programs in the US Departments of Education and Labor, the Social Security Administration, and low-income assistance programs in the US Department of Health and Human Services Administration on Children and Families, US Department of Agriculture Food and Nutrition Service, and the US Treasury (earned income tax credit). Over 27 years, Smalligan served five administrations, working extensively on Social Security issues for four of them.

Smalligan developed policies that have been incorporated into many pieces of legislation, including the North Atlantic Free Trade Agreement of 1993, the Taxpayer Relief Act of 1997, and the American Recovery and Reinvestment Act of 2009. In 2012, he was a guest scholar at the Brookings Institution, where he analyzed the Social Security disability programs and with Jeff Liebman published recommendations that helped influence the Bipartisan Budget Act of 2015.

Smalligan received a master's degree in public policy from the University of Michigan.

STATEMENT OF INDEPENDENCE

The Urban Institute strives to meet the highest standards of integrity and quality in its research and analyses and in the evidence-based policy recommendations offered by its researchers and experts. We believe that operating consistent with the values of independence, rigor, and transparency is essential to maintaining those standards. As an organization, the Urban Institute does not take positions on issues, but it does empower and support its experts in sharing their own evidence-based views and policy recommendations that have been shaped by scholarship. Funders do not determine our research findings or the insights and recommendations of our experts. Urban scholars and experts are expected to be objective and follow the evidence wherever it may lead.



500 L'Enfant Plaza SW
Washington, DC 20024

www.urban.org