DISTRIBUTIONAL EFFECTS OF ALTERNATIVE STRATEGIES FOR FINANCING LONG-TERM SERVICES AND SUPPORTS AND ASSISTING FAMILY CAREGIVERS

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CRR WP 2018-1
March 2018

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Abstract

We use two historical data sources – the *Health and Retirement Study* and the *Medicare Current Beneficiary Study* – to consider the patterns in older Americans' severe disability and their use of long-term services and supports (LTSS) by age and socioeconomic status. We then use a dynamic microsimulation model to project how the effects of various interventions to support those with severe disabilities and their caregivers would be distributed across the income distribution. The interventions that we examine fall into three broad classes: tax credits for caregiving expenses, respite care for people in the community with family caregivers, and new social insurance programs. Within each broad class of policies, we examine how sensitive outcomes are to changes in policy details (such as, in the case of tax credits, deductible levels, refundability, and income phase-outs).

This paper found that:

- Older adults with less education and less wealth are more likely to report disabilities and service use than their more educated and wealthier counterparts.
- This pattern persists when we look at people at a point in time but also, more robustly, when we look at their disabilities prospectively. In a sample of older adults who do not report disabilities at baseline, we find that those with fewer economic resources earlier in life are generally more likely to develop disabilities and use paid LTSS over the next two decades, but the differences narrow when we restrict the sample to people who do not develop disabilities until their late 70s.

The policy implications of this paper are:

- The uneven distribution of disability risks across the population poses challenges for developing effective LTSS policies. Those most likely to need LTSS often lack enough resources to contribute to LTSS programs, and programs that try to contain costs by using underwriting or imposing work requirements often disqualify those who most need coverage.
- Certain classes of policies, such as respite care benefits, tend to direct much of their benefits to those in lower income quintiles, according to our projections. Caregiver tax

credits and social insurance programs generally distribute benefits more proportionally, although impacts vary depending on how the policies are specified.

- Policy design details can significantly affect distributional outcomes. Provisions' effects can be sensitive to the stacking order in which they are implemented.
- It can be useful to examine trends and proposals not only cross-sectionally but also over longer time periods. For example, the distributional effects of social insurance programs depend on the relatively high early-life mortality of those with less education and lower earnings and wealth.

Introduction

A significant financial risk for retirees is the possibility of developing serious disabilities in old age and needing long-term services and supports (LTSS). In 2014, 16 percent of adults ages 65 and older and 40 percent of adults ages 85 and older had serious LTSS needs, defined as requiring help for at least 90 days with two or more activities of daily living (ADLs), such as bathing, dressing, or transferring, or having severe cognitive impairment (Johnson, 2017b). Most people with LTSS needs rely heavily on unpaid help from family and friends, often creating physical, emotional, and financial hardships for their caregivers (Freedman and Spillman, 2014; Wolff et al., 2016). Nonetheless, many older adults receive paid services, such as nursing home care, residential care, or paid home care. In 2014, 8 percent of adults ages 65 and older and 26 percent of adults ages 85 and older received some paid LTSS (Johnson, 2017b). Favreault and Dey (2015) projected that slightly more than half of today's 65-year-olds will develop serious LTSS needs and receive paid care before they die. About one in seven will receive paid LTSS needs for five or more years.

Paid LTSS is often expensive. Favreault and Dey (2015) estimate that total lifetime LTSS expenditures after age 65, discounted to age 65, will average about $144,000 in constant 2015 dollars for people born between 2015 and 2019 who obtain paid care. Lifetime costs will exceed $250,000 for about one in eight older adults who receive paid LTSS. Medicaid is the single largest payer of LTSS (O'Shaughnessy, 2014), and the growth in the size of the older population and increased life expectancy at older ages could substantially increase Medicaid spending (Commission on Long Term Care, 2013). Because Medicaid covers LTSS only for people with virtually no non-housing wealth (including those who depleted their assets paying for LTSS), Medicare does not generally cover LTSS,[1] and relatively few older adults are covered by private long-term care insurance (Johnson, 2016), and many LTSS expenses are paid out of pocket. Only 36 percent of adults ages 40 and older who responded to a 2016 poll said they were extremely or very confident that they could pay for their future LTSS expenses (AP-NORC Center for Public Affairs Research, 2016). Even this limited confidence may be misplaced, because 47 percent of adults ages 65 and older who participated in the survey said they planned

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[1] According to Medicare.gov, "Long-term care is a range of services and support for your personal care needs. Most long-term care isn't medical care, but rather help with basic personal tasks of everyday life, sometimes called activities of daily living. Medicare doesn't cover long-term care (also called custodial care), if that's the only care you need. Most nursing home care is custodial care." See https://www.medicare.gov/coverage/long-term-care.html.

to rely on Medicare for all or quite a bit of their LTSS expenses, even though Medicare rarely covers LTSS.

Rising LTSS expenses focus attention on policy options that could help families pay for LTSS, relieve stressed family caregivers, and control future Medicaid spending (Bipartisan Policy Center [BPC], 2017; Commission on Long-Term Care, 2013; LeadingAge, 2016; Long-Term Care Financing Collaborative, 2016; US House of Representatives, 2016; Warshawsky and Marchand, 2017). Possible approaches to helping family caregivers include caregiver tax credits, expanded respite care options, and additional information, training, and counseling for caregivers. Various Medicaid reforms could curb Medicaid LTSS spending, such as better enforcement of estate recovery rules for deceased Medicaid LTSS beneficiaries. Prefunding future LTSS spending through private insurance or a potential new social insurance program could increase the resources available to cover future LTSS needs and relieve hard-pressed state budgets, which cover a large share of Medicaid spending.

The effectiveness of any new program and its distributional impact will depend on how eligibility requirements, benefit rules, and financing mechanisms are specified and how they interact with LTSS use and spending patterns and the characteristics of people with LTSS needs and their family caregivers. For example, efforts to prefund future LTSS spending could be effective if people who develop LTSS needs in later life generally have enough resources when younger to set aside some funds to cover future LTSS costs, such as by purchasing private insurance or contributing to a social insurance program. The impact of a social insurance program that covers LTSS costs only after enrollees have experienced LTSS needs for some time will depend on the length of the waiting period, the typical duration of LTSS needs, and the capacity of people with LTSS needs to cover LTSS spending out of pocket during the waiting period. Because Medicaid already covers LTSS costs once people run out of money, this type of catastrophic coverage would not reduce out-of-pocket spending for people with insufficient resources to cover their own spending during the waiting period.

This report simulates the distributional effects of various strategies for financing LTSS and assisting family caregivers. The first part of the analysis uses historical household survey data to examine how LTSS needs and use vary by socioeconomic status, since the impact of alternative ways to help families fund later-life care needs depend partly on the prevalence and duration of LTSS needs within income and wealth groups. We compare LTSS needs and use both cross-sectionally and longitudinally. In addition to showing how long LTSS needs last, the longitudinal analysis compares household financial resources with LTSS needs and use many years later, which provides insight into people's ability to save for their own future LTSS needs. The second part of the analysis uses a detailed dynamic microsimulation model to compare various proposals for caregiver tax credits, respite care, and social insurance programs. We focus on distributional differences within and across proposal types.

Our results show that older people with limited financial resources are more likely to develop serious LTSS needs and receive paid LTSS, including paid home care, residential care, and nursing home care than people with more financial resources, and they tend to experience longer spells of LTSS needs and use. The simulations reveal that the proposals could have very different effects for people at different points in the income distribution. For example, respite care benefits tend to target those with relatively low incomes more than the social insurance programs and caregiver tax credits we consider. The simulations also reveal that, because of higher mortality among those with lower socioeconomic status, the effects of the social insurance programs we model may be less progressive when examined on a lifetime basis than when examined at a point in time.

Background

Many older adults who develop LTSS needs experience financial hardship. Older adults with health problems tend to have less wealth than healthier older adults, and wealth tends to fall when people develop health problems (Johnson, 2017a; Poterba, Venti, and Wise, 2010). One study, for example, found that over a nine-year period median household wealth grew 20 percent for married people age 70 and older who did not receive nursing home care, but fell 21 percent for their counterparts who received nursing home care; for single people who received nursing home care, median household wealth fell 74 percent (Johnson, Mermin, and Uccello, 2006). Home equity does not decline much at older ages, except when homeowners become widowed or enter a nursing home (Venti and Wise, 2004).

Older people receiving LTSS generally suffer financially because these services and supports are expensive and there are few public or private insurance options. Estimates from a 2015 national survey of nursing homes show that the median cost of nursing home care in a semi-private room is now about $80,000 per year, and as much as 80 percent more in certain parts of the continental United States (Genworth, 2017). Standard health insurance plans do not cover LTSS, and Medicare covers LTSS only in special circumstances.

Only about 11 percent of adults ages 65 and older now have private long-term care insurance (Johnson, 2016).[2] Consumer surveys indicate that people are often reluctant to purchase long-term care insurance because many underestimate future LTSS costs; mistakenly believe that Medicare or standard health insurance will cover much of their expenses; do not trust insurance companies; or believe that premiums are too high (Associated Press-NORC Center for Affairs Research, 2015; Brown, Goda, and McGarry, 2012; Khatutsky et al., 2017; Wiener et al., 2015). Moreover, the long-term care insurance market is shrinking (Cohen, 2014; Gleckman, 2017), and some executives at provider organizations have expressed concerns about the industry's future because long-term interest rates have been unusually low, declining lapse rates means that more policyholders eventually file claims, premiums remain fixed over a policyholder's lifetime unless insurers can convince regulators to rerate a class of policyholders, and a significant but uncertain share of dementia claims are very expensive (Gleckman, 2016).

Because paid services are costly and insurance is limited, many LTSS recipients rely on unpaid caregivers, typically spouses and adult children (Wolff et al., 2016). Those who need additional care generally pay out of pocket until they exhaust their resources and then end up on Medicaid, which is restricted to people with very little wealth. Spillman and Waidmann (2015) estimate that Medicaid covers about two-thirds of nursing home residents ages 65 and older. As the population ages and LTSS costs rise, there is growing concern that Medicaid will increasingly strain federal and state budgets (Commission on Long-Term Care, 2013). Although

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[2] Johnson's estimate, based on self-reports in the Health and Retirement Study, did not count respondents who reported having long-term care insurance coverage through Medicare, Medicaid, or standard health insurance plans. Another way of estimating private long-term care insurance coverage is to compare industry and regulatory reports of lives in force with population measures. The National Association of Insurance Commissioners (2016) reported that 7.15 million long-term care insurance lives were in force in 2015. In their experience report from 1984 to 2007, the Society of Actuaries, Long-Term Care Experience Committee (2011) reported that about 46 percent of exposure years in private long-term care insurance covered adults younger than age 65 and almost a third covered those younger than age 60. Based on more recent survey data, LifePlans (2017) estimated that 21 percent of long-term care insurance buyers in 2015 were younger than age 55 and another 47 percent were ages 55 to 64, and that the average purchase age was about 60. In 2015, the Social Security Administration reported that the Social Security area population included 47.737 million people ages 65 and older, 66.862 million people ages 60 and older, and 88.780 million people ages 55 and older. These population totals imply that the ratio of long-term care insurance plans in force *for people at all ages* to people ages 65 and older is 14.98 per 100, to people age 60 plus of 10.69 per 100, and to people 55 plus of 8.05 per 100. However, we need to adjust the ratios at the older ages to account for plans in force at younger ages. Adjusting for the fact that roughly one third of the lives in force likely apply to those younger than age 60 and 45 percent to those younger than 65, we can approximate coverage prevalence at close to 9 percent at ages 60 and older and ten percent at ages 65 and older, in line with Johnson's estimate.

exact estimates vary, Medicaid pays more than $100 billion a year for LTSS, covering between 40 and 60 percent of the nation's LTSS costs (Congressional Budget Office, 2013; Kaiser Family Foundation, 2013; O'Shaughnessy, 2014). The Congressional Budget Office (2015) projects that between 2015 and 2040, total Medicaid spending as a share of gross domestic product will rise from 2.2 to 2.9 percent.

People who lack resources for LTSS can receive poor or inappropriate care (Komisar, Feder, and Kasper, 2005). This care gap can not only harm those who need assistance but also increase costs for Medicare, which pays for the hospitalizations and other medical treatments that often become necessary when people receive inadequate assistance (Komisar and Feder, 2011).

Most other wealthy countries have broader public coverage of LTSS, although coverage varies significantly across countries in terms of scope and comprehensiveness, preferred service environment, cost sharing, unit costs, and other factors (Muir, 2017). The U.S. bears the strongest similarity to Britain, with both countries heavily means testing government support of LTSS.

In a review of international experiences with LTSS, Colombo et al. (2011) identify several objectives that have guided efforts to design or modify LTSS programs in OECD countries. They first highlight support of family caregivers, suggesting policy designs that provide cash to caregivers, promote work-life balance through choice and flexibility, and introduce support services, such as respite and counseling. They also focus on the need to expand the supply of LTSS workers through better recruitment and retention and increased productivity. A key recommendation is the importance of financing policies that reconcile access and cost. To help achieve this goal, they suggest targeting resources to people with the greatest need, moving toward forward-looking policies (prefunding), and facilitating the development of new financial instruments. They also suggest that countries consider value when formulating LTSS policy, such as by encouraging efficiency and improving productivity, promoting home and community-based services (HCBS), encouraging healthy aging and prevention, incentivizing appropriate utilization, and fostering care coordination. Another way to contain costs is to target the "needy" carefully, such as by putting special restrictions on responsible relatives; focusing on caregivers with the highest risk of leaving labor force, experiencing burnout, or abandoning caregiving; and identifying care recipients who may be in danger of physical harm or who need services to maintain their dignity and autonomy. Many of

Colombo et al.'s recommendations echo those of previous US analyses that have similarly highlighted the importance of the caregiver workforce, uncompensated care providers, and the fiscal sustainability of programs in an aging society (National Council on Disability, 2005; Commission on Long-Term Care, 2013).

The Importance of Details for Designing LTSS Policy in the U.S.

Many stakeholder groups and policy analysts have recently proposed changes to LTSS financing and delivery (BPC, 2016, 2017). Earlier reports include those by the National Council on Disability (2005) and the Commission on Long-Term Care (2013), and, much earlier, the U.S. Bipartisan Commission on Comprehensive Health Care, also known as the Pepper Commission (1990). A recent MACPAC study summarizes many of their conclusions (Medicaid and CHIP Payment and Access Commission, 2016a). A growing literature helps inform policymakers about the tradeoffs between policies with different goals that target different populations.

Policymakers in the states are also increasingly engaged in conversations about LTSS needs and financing and have pursued research on potential LTSS policies. For example, lawmakers in Washington State mandated a feasibility study by the state's department of social and health services to consider both public and private LTSS options, which was completed earlier this year with the assistance of commissioned consultants (Armentrout et al., 2017). Some state and federal policymakers have even proposed comprehensive LTSS reforms within a substantial restructuring of the health care system. For example, Sen. Bernie Sanders (I, VT) proposed comprehensive LTSS coverage in some of his earlier legislative proposals.[3] We have evaluated some of the cost and distributional aspects of the LTSS component of such proposals in earlier work (Holahan et al., 2016; Mermin, Burman, and Sammartino, 2016).

Benefit Features. Table 1 summarizes a selection of policy features that have been included in various LTSS reform proposals, such as social insurance, social assistance, and incremental additions to the tax system or Medicare benefit package. Key dimensions include their comprehensiveness and generosity, progressivity, targeting efficiency, possible work and savings incentives or disincentives, potential program interactions, and efforts to control costs and limit adverse selection. We highlight some of the crucial elements below.

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[3] Subsequent proposals have changed this provision.

Social Insurance. Among the more important decisions that would shape the costs and distributional effects of a social insurance program are choices about cohort coverage and the funding approach (for example, pay-as-you-go or pre-funded). As people contribute to a social insurance program longer, the annual contributions required to cover expected future costs shrink, reducing the financial burden relative to income. However, delaying required contributions until later in one's working life, when people tend to earn more and have more disposable income, may boost voluntary participation rates, especially for LTSS coverage that requires people to consider later-life outcomes. In addition to the technical challenges associated with developing sound and secure funding streams, there are also potentially serious political challenges, such as how to balance the need to keep tax rates or premiums as low as possible with the need to minimize government subsidies as other government spending priorities grow and how to convince taxpayers that they will earn a reasonable return on their contributions in the form of future program payouts. For example, a mature funded system would likely impose taxes or premiums on enrollees for decades before they might qualify for benefits. Newly implemented pre-funded programs financed through the tax system that cover both older and younger cohorts could create significant cross-cohort inequities, because older cohorts would not be taxed as long as younger cohorts. To limit these inequities while covering older cohorts, some analysts have suggested pairing payroll taxes with premiums that depend on how long people have contributed to the program.[4]

Respite Care Benefits. Among the motivations for providing respite care to family caregivers is to protect them from burning out and to enable them to remain in the labor force. Several government programs provide respite, including the National Family Caregiver Support Program and the Department of Veterans Affairs (Mudrazija and Johnson, forthcoming; National Academies of Sciences, Engineering, and Medicine, 2016). If a new program were created, any links to existing programs could significantly affect costs and the distributional impact on beneficiaries. The recent LTSS proposal from BPC (2017), for example, integrated proposed respite care benefits with Medicare's Chronic Care Management (CCM) program. In assessing

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[4] One challenge with funding government health programs, such as Medicare, with premiums is that some segment of the population will likely be unable to afford these premiums. Medicare has dealt with the affordability problem by offering subsidies through the Medicare Low-Income Subsidy program and the Medicare Savings Programs.

the impact of respite care, analysts must consider whether its benefits accrue primarily to caregivers or to care recipients.

Tax Credits for Caregiving Expenses. Many recent legislative proposals, such as Senate bill S.1151 and House bill H.R. 2505 in the 115th Congress, would expand the tax code's preferential treatment of caregivers, usually by granting tax breaks for out-of-pocket caregiving expenses. Several design features will shape the cost and distributional impact of credits designed to compensate caregivers for direct expenses. For example, policymakers must set the credit's base (choosing whether to cover only out-of-pocket caregiving expenses or also lost wages), define the components of the base (such as by restricting certain expenses to prevent tax filers from double dipping with medical expense deductions or dependent care tax credits and to avoid subsidizing ordinary consumption expenses), and decide how to value certain components (such as lost wages, which could be valued at an individual's own wage or some nationwide caregiver wage). Other crucial issues include the maximum credit level, whether the credit is refundable (Batchelder, Goldberg, and Orszag, 2006), whether it applies to the first dollar of spending or kicks in only after caregivers have spent some minimum amount (i.e., a deductible), whether and how it phases out with income, whether it is restricted to those with earned income, how it addresses joint filers (many of whom would likely include only one caregiver but some of whom could include two caregivers), and whether and how parameters are indexed (such as with prices or wages). Seemingly arcane details, such as the order in which the credit is processed relative to other features of the tax code, can have important distributional consequences. For example, it is possible that a nonrefundable tax credit would be stacked with other nonrefundable credits and thus be applied before the Earned Income Credit and American Opportunity Credit, although it seems more plausible that Congress would apply a nonrefundable credit last. A broader issue about using tax credits stems from more general concern about how much social spending is already included in the tax code and the challenges that this orientation poses for budget reform. Burman and Phaup (2011), Marron and Toder (2011), Toder, Berger, and Zhang (2016), and Joint Committee on Taxation (2017) provide aggregate and distributional estimates of tax expenditures.

Because caregivers are quite diverse, the impact of caregiver credits could vary widely across the caregiver population. An estimated 18 million adults provide unpaid care to older adults with LTSS needs, but most of the care provided comes from a relatively small group of adults who serve as primary caregivers and provide intensive help (Mudrazija and Johnson, forthcoming). This care often creates physical, emotional, and financial burdens on caregivers, although many caregivers report that they themselves benefit from providing care, because they find the activity to be personally fulfilling and it enriches their relationship with the care recipient (Spillman et al., 2014). Many caregivers are ages 65 and older and assist their spouse. Nonetheless, about 40 percent work full time and another 18 percent work part time. About 4 in 10 family caregivers have incomes below 200 percent of the federal poverty line (FPL), but 3 in 10 have incomes above 400 percent of the FPL (Mudrazija and Johnson, forthcoming).

Financing Features. Table 2 summarizes a selection of financing bases that could be used for the wide range of benefit proposals detailed above, each of which has different distributional properties. We identify some literature on the distributional incidence of each potential financing base. Proposals could use a combination of revenue sources, such as co-payments and payroll taxes or premiums and consumption taxes, to meet financing and distributional objectives, rather than relying on a single source. Most financing bases in the table are governmental, given the state's tax authority. Some – such as premiums, copayments, and deductibles – could be used in largely or fully private but regulated approaches. When considering the financing of any new initiatives or changes to governmental revenues (for example through tax reform and tax reductions), it is important to consider the larger fiscal context and the non-LTSS needs that will confront our aging population (Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, 2017; Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, 2017; Congressional Budget Office, 2017).

Cost Containment Features within Benefit and Financing Mechanisms. An important question is whether LTSS proposals could include mechanisms to promote long-range financial stability. One idea along these lines would be to introduce a wedge between the way that the benefits grow and the contributions or transfers that finance those benefits grow to prevent benefit obligations from increasing more quickly than the revenues that support them. For example, a public or private insurance system could use differential indexing, with revenues either implicitly or explicitly indexed to grow more quickly than benefits.

Controlling adverse selection – the tendency for people with a relatively high risk of needing care to enroll in an LTSS insurance program and for people with less risk to opt out – is an important aspect of cost containment. The insurance industry has historically addressed adverse selection through underwriting, denying coverage to people with identifiable health conditions or charging them higher premiums. Within voluntary public programs, auto-enrollment has sometimes been suggested as a mechanism to limit adverse selection, because it could expand the insurance pool and bring in more healthy people (Giese et al., 2017). Another mechanism some have suggested is partial benefits that increase to the full benefit over a vesting period. Work requirements could also help, because they would exclude people with preexisting health conditions that prevent them from working. Moral hazard is often addressed through strict screening at the time of benefit application.

Measuring Disability and Nursing Home Care with Cross-Sectional Historical Data

We began by examining the prevalence of disability and nursing home care for adults ages 65 and older in the 2011, 2012, and 2013 Cost and Use files from the Medicare Current Beneficiary Survey (MCBS). The MCBS is a continuous, in-person survey of a representative national sample of the Medicare population, sponsored by the Office of Enterprise Data and Analytics (OEDA) of the Centers for Medicare and Medicaid Services (CMS) in partnership with the Center for Medicare and Medicaid Innovation. Linked to Medicare claims data, the survey was designed to aid CMS in administering, monitoring, and evaluating the Medicare programs. It has been carried out for more than 20 years, encompassing more than one million interviews.

Importantly for this project, the MCBS includes an extensive set of questions about chronic conditions and functional limitations. It asked respondents whether they had difficulty with each of six ADLs – bathing, dressing, eating, transferring, walking, and toileting. We created four disability measures, identifying respondents that (1) had difficulty with an ADL, (2) received help with an ADL, (3) received help with an ADL for at least 90 days, and (4) received help with an ADL for at least 90 days or reported Alzheimer's disease or dementia. Because many respondents with the severest disabilities, such as severe cognitive impairment, may be unable or unwilling to answer these sorts of questions, the survey collects information from proxies for responding living in the community and from providers for respondents living in facilities. Another advantage of the MCBS is that it allows analysts to distinguish between spells in short-term facilities and long-term facilities, which is not possible in some other surveys without making strong assumptions. Because we pooled three years of the MCBS survey, we adjusted the surveys' annual calendar year weights.

Although the MCBS has some income data, it does not include reliable asset data for the full population (about half of those currently in facilities, for example, are missing wealth data). Also, the MCBS focuses on the Medicare population, not the Medicaid population. An important subset of the older Medicaid population does not qualify for Medicare benefits and is thus excluded from the sample.[5] Because of its focus on the Medicare program, MCBS has limited information about Medicaid HCBS, though it does include information about disability and Medicaid coverage more broadly, including for nursing homes.

Table 3 shows the distribution of disability, and thus potential LTSS needs, at ages 65 and older in the 2011 to 2013 waves of the MCBS by completed education and five-year age groups. The risk of having a disability varies with education, an important dimension of socioeconomic status and a close correlate of economic well-being. At the youngest ages (65 through 69), those without a high school diploma were more than four times more likely to report three of the disability types than those with at least a four-year college degree; for the fourth disability type, they were three and one-half times more likely to be classified as disabled. The gap between the educational groups narrowed with age, but remained quite significant at advanced ages, especially between those who did not earn a high school diploma and all others.

Table 4 shows comparable estimates of nursing home care from the same three years of the MCBS. As with disability, nursing home care is very closely associated with age and education. For those with the least education, the probability of being in a nursing home at the time of the survey is four times higher than for those with the most education at the youngest ages (65 to 69), and more than double at the oldest ages (90 to 94 and 95 plus). The chance of

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[5] The Congressional Budget Office (2013) estimated that in 2009 756,000 people ages 65 and older were covered by Medicaid but not Medicare. The Medicaid and CHIP Payment and Access Commission (2016b) does not estimate the size of this group directly, but using other estimates from their exhibit 14, one can infer that at a minimum this group numbered roughly 536,000 people ages 65 and older in 2013 The number could be higher because Medicaid statistics classify people by their initial reason for entitlement, not their current age, so the estimate may exclude some people ages 65 and older who enrolled at a younger age because of a disability.

receiving Medicaid payment for a nursing home varies increases rapidly with age and falls as educational attainment rises. From ages 65 through 74, the likelihood of obtaining Medicaid-financed nursing home care was about 11 to 12 times higher for those without a high school diploma than for those with a college degree; at older ages, less-educated adults were five to nine times more likely to receive Medicaid-financed nursing home care than better-educated adults. Combining the data from Table 3 and Table 4, we see that, conditional on having a severe disability, about 40 percent of those without a high school diploma received Medicaid-financed nursing home care, compared with about 7 percent of those with a four-year college degree or more.

Measuring LTSS Needs and Use with Historical Longitudinal Data

To examine how LTSS needs and use vary by socioeconomic status and financial resources available earlier in life, we turned to data from the Health and Retirement Study (HRS), a longitudinal survey of older Americans conducted by the Survey Research Center at the University of Michigan. It collects data on a wide range of topics, including health, disability, and cognitive status, receipt of LTSS, financial status, number of adult children, and basic demographics. The survey's sampling frame is complex. The HRS began interviewing a sample of 12,652 respondents in 1992, consisting of adults ages 51 to 61 and their spouses, with follow-up interviews in 1994 and 1996. In 1993, it began interviewing another sample of 8,222 respondents, consisting of adults ages 70 and older and their spouses, with a follow-up interview in 1995. The HRS merged the two samples in 1998 and added new samples of respondents ages 51 to 56 and ages 67 to 74, so that the 1998 sampling frame consisted of adults ages 51 and older. HRS respondents have been interviewed every other year since 1998, and the survey adds a new sample of respondents ages 51 to 56 every six years (most recently in 2016, although those data were not yet available when we completed our analysis). In 2014, the HRS interviewed 18,748 respondents, including 18,172 who were older than age 50 and 10,386 who were ages 65 or older.

All HRS respondents live in the community, not in nursing homes, when first interviewed, but the HRS follows them into nursing homes as necessary. Proxy responses are solicited from spouses and other close relatives when respondents are living in nursing homes or otherwise unable to respond themselves. The HRS also collects information from next of kin after respondents die, providing information about disability and care received in the last months of life. Our study used data from 1992 through 2014, the most recent year available, and included information about recently deceased respondents from the exit interviews.[6]

Measures

Disability. The HRS collects detailed information about disability status. Each wave, the HRS asks respondents if they have any difficulty with ADLs or instrumental activities of daily living (IADLs) because of a physical, mental, emotional, or memory problem that is expected to last at least three months. ADLs include getting in and out of bed, dressing, walking across a room, bathing or showering, eating, and using the toilet. IADLs include using a map, preparing a hot meal, shopping for groceries, making a phone call, and taking medication. We classified respondents who reported that they did not engage in a particular IADL as having a limitation only if they said that they did not perform that activity because of a health problem. Exit interviews ask the next of kin if recently deceased respondents received any help with ADLs or IADLs over the last three months of their lives; it does not ask if they had any difficulty with those activities.

The survey assesses cognitive impairment by administering a cognitive test to self-respondents. The test measures episodic memory and mental status. Interviewers read a list of 10 nouns and ask respondents to recall as many words as possible. After about five minutes of questions on other topics, interviewers again ask respondents to recall as many words as possible from the original list of 10 nouns. The test measures mental status by asking respondents to subtract 7 from 100 five successive times; count backwards 10 times; report the month, day, year, and day of the week when interviewed; name an object they “usually used to cut paper” and the “kind of prickly plant that grows in the desert;” and name the US president and vice president. HRS uses these responses to create a cognitive score, assigning one point for each correct word recalled (for a maximum score of 20 points), one point for each successful subtraction of seven (for a maximum score of 5), two points for successfully counting backwards (one point if successful on the second try but not the first), and one point for correctly naming

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[6] RAND has produced a cleaned version of a subset of the HRS data, which we used whenever possible. When we completed our analysis, the latest release of the RAND data set was version P (Bugliari et al., 2016). It does not include data from the exit interviews, which we collected from the original HRS data files.

each object, the president, the vice president, and each element of the date (for a maximum score of 8). The total possible score, then, is 35 points. The HRS imputed missing cognition data for self-respondents, based on demographic, health, and economic variables, as well as cognitive variables from the current and prior waves (Fisher et al. 2015).[7]

Respondents who provide survey information through proxies are more likely than self-respondents to have cognitive impairments, yet the HRS cannot administer a cognitive test to them. Instead, the survey asks proxies about several behaviors that are often symptomatic of severe cognitive impairment – whether respondents ever get lost in a familiar environment, ever wander off and do not return by themselves, or ever see or hear things that are not really there. The HRS also asks proxies to rate respondents' memory, from excellent to poor. Exit interviews administered to deceased respondents' next of kin include these questions about memory and behaviors associated with cognitive impairment.

We classified respondents as having severe cognitive impairment if they scored 7 points or less on the cognitive test or if their proxy respondents (or next of kin) reported that they had poor memory or ever exhibited symptoms of severe cognitive impairment. The 7-point threshold is the average of the 8-point threshold used by Herzog and Wallace (1997) to define cognitive impairment and the 6-point threshold used by Langa, Kabeto, and Weir (2009).

LTSS Use. The HRS collects data on respondents' use of various types of LTSS. Respondents who report receiving help with ADLs or IADLs are asked how much assistance they received from each helper over the past month and whether each helper was paid. Exit interviews collect information about help received in a "typical month" over the last three months of a respondent's life. The HRS also asks respondents (and next of kin) about nursing home care, including the number of nights spent in a nursing home over the past two years or since the previous wave and whether Medicaid covered any of the costs. The analysis considered only nursing home care that lasted at least 90 days because people with shorter stays most likely entered a nursing home for rehabilitative care and may not need long-term care. We used hot-deck techniques to impute missing responses on length of nursing home stays.

We also identified respondents who received Medicaid-financed nursing home care, including both those who explicitly reported that Medicaid paid for at least some of their nursing

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[7] For more information about the cognitive measures in the HRS, see McArdle, Fisher, and Kadlec (2007) and Ofstedal et al. (2005).

home care and those receiving nursing home care who reported having Medicaid coverage. Because household surveys generally undercount Medicaid coverage (Call et al., 2008), we also assigned Medicaid to HRS respondents who reported receiving Supplemental Security Income (SSI) payments, which generally qualifies people for Medicaid.

Finally, the HRS collects data on residential care. The survey identifies respondents whose home is part of a retirement community, senior housing, or another type of housing that provides services for older adults and asks them about the various services offered. We classified respondents as receiving residential care if they lived in a senior housing complex that offered group meals, transportation services, nursing care or an on-site nurse, help with housekeeping chores, or help with bathing, dressing, or eating and if they used any of these services. Exit interviews do not collect information on deceased respondents' living situations, so we could not identify respondents who received residential care in the final months of their life. Although it is difficult to measure residential care and many alternative definitions are possible, our estimate of the overall prevalence of such care using this measure is similar to the recent prevalence estimate published by the National Center for Health Statistics (2016).

Financial Status. We constructed measures of baseline household income and wealth, reported in inflation-adjusted 2017 dollars (based on changes in the consumer price index). Annual household income included earnings (from both wage and salary employment and self-employment); pensions and annuities; SSI and Social Security benefits (including disability insurance benefits); business or farm income; rent; dividend and interest income; trust funds; royalties; unemployment and worker's compensation benefits; veteran's benefits; welfare; benefits from the supplemental nutrition assistance program (formerly known as food stamps); alimony; and lump sums from insurance, pensions, and inheritances received by a respondent or spouse. Our total household net worth measure consisted of housing wealth, financial wealth, and other household wealth, net of any outstanding debt. Housing wealth included the value of a primary residence, net of any housing debt (including outstanding mortgages, home loans, and home equity lines of credit). Financial wealth included the value of IRAs; Keoghs; employed-sponsored retirement accounts; stocks; mutual funds; investment trusts; bonds; bond funds; CDs; government savings bonds; treasury bills; checking, savings, and money market accounts; and other savings, net of non-housing debt. Other household wealth included the net value of businesses, vehicles, and real estate (except for primary and secondary residences). Non-housing wealth was computed as total household net worth minus housing wealth. We used imputed financial values when respondents did not report complete information. To account for differences in household size and thus consumption demands, we created per capita measures of household income and wealth that divided total computed values by two for married respondents.

Methods

Our analysis estimated the lifetime risk of developing severe LTSS needs and the lifetime risk that adults with severe LTSS needs receive paid LTSS. It also compared household wealth of people who subsequently developed serious LTSS needs and received paid LTSS with those did not develop serious LTSS needs. We classified individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment, a disability threshold similar to that specified in the Health Insurance Portability and Accountability Act (HIPAA) for collecting tax-free benefits from private long-term care insurance.[8]

Our analysis first estimated the likelihood that adults developed serious LTSS needs over time and received paid LTSS, which included paid home care, residential care (such as assisted living), and nursing home care. We constructed two samples. The first sample consisted of 7,791 HRS respondents ages 51 to 61 in 1992 who did not report any ADL limitations at that time. These adults were ages 73 to 83 in 2014, the last available wave when we completed our analysis. The second sample consisted of 2,576 HRS respondents ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time. These adults were ages 91 to 96 in 2014. The HRS was unable to follow some respondents until death because they were still surviving or they dropped out of the survey over time. Considering only observed LTSS needs and use for these respondents would lead us to understate their lifetime experience, and considering only cases observed from disability onset until death would bias our estimates, because the sample would over represent people who died at relatively young ages or who developed LTSS needs at relatively old ages. Instead, we accounted for censoring by basing our estimates of lifetime

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[8] HIPAA stipulates that an individual must be unable to perform two or more ADLs for at least 90 days without substantial assistance from someone else or must require substantial supervision because of severe cognitive impairment. However, the HRS does not ask respondents if they need assistance with various ADLs; it only asks if they have any difficulty with ADLs. To create a threshold more consistent with HIPAA, we added the requirement that individuals must also receive some LTSS.

LTSS on Kaplan-Meier survivor functions that started at age 65 and showed at every subsequent age the share of respondents who had not yet experienced each outcome.[9] Respondents remained in the sample until they experienced the outcome or dropped out of the survey.[10] To show how probabilities vary by personal characteristics, we also estimated separate functions for men and women and for various groups defined by race and ethnicity, educational attainment, baseline household income, and baseline household wealth.

To estimate the duration of serious LTSS needs and use of paid LTSS, we estimated hazard models of time to cessation of serious needs (through recovery or, more commonly, death) or paid care for those respondents with serious LTSS needs and those receiving paid LTSS. Our duration models were estimated on samples of HRS respondents ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time and who subsequently developed serious LTSS needs and received paid LTSS. Our samples consisted of 1,420 respondents with serious LTSS needs, 855 respondents receiving any paid LTSS, and 433 respondents receiving long-term nursing home care.

We also examined how baseline household wealth varied with the incidence and duration of subsequent LTSS needs and use. We compared mean wealth, the share with no wealth, and wealth at different points in the distribution – the 10th, 25th, 50th, 75th, and 90th percentiles. Again, we examined outcomes in multiple samples. One sample consisted of 6,052 HRS respondents who were ages 53 to 61 in 1992 and did not report any ADL limitations at that time. We observed subsequent LTSS needs, paid LTSS use, nursing home use, and Medicaid-financed nursing home for this sample until they reached ages 75 to 83 in 2014. A second sample consisted of 2,676 HRS respondents who were ages 70 to 75 in 1993 and did not report any ADL or IADL limitations at that time. We observed subsequent LTSS needs and paid LTSS use for this sample until they reached ages 91 to 96 in 2014. For this second sample, we also examined how baseline wealth varied with LTSS experience through age 85.

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[9] We subtracted this estimate from one to compute the share that experienced each outcome.

[10] Respondents who died before they experienced the event remined in the sample indefinitely, because unlike respondents who dropped out of the survey they could never subsequently experience the event.

Results

Forty percent of adults ages 51 to 61 without any ADL limitations develop serious LTSS needs by age 83 (Table 5). Twenty percent receive some paid LTSS, such as paid home care, residential care, or nursing home, 9 percent receive at least 90 days of nursing home care, and 4 percent receive at least 90 days of Medicaid-financed home care. The likelihood of developing serious LTSS needs by age 83 does not vary much by sex, but women are more likely than men to receive paid LTSS (24 versus 16 percent), partly because women are more likely than men to be widowed and thus less likely to be able to turn to a spouse for care. African Americans are more likely than Hispanics and non-Hispanic whites to develop serious LTSS needs and receive paid LTSS by age 83.

People with relatively little income and wealth at ages 51 to 61 are more likely to develop serious LTSS needs and receive paid LTSS by age 83 than those with more financial resources. Compared with people who receive more than $60,000 per year in per capita household income at ages 51 to 61 (in inflation-adjusted 2017 dollars), those receiving no more than $20,000 per year are 67 percent more likely to develop serious LTSS needs by age 83 and twice as likely to receive some paid LTSS or long-term nursing home care. Only 2 percent of those with more than $40,000 in per capita household income at ages 51 to 61 receive any Medicaid-financed nursing home care by age 83. Similarly, people with little household net worth are more likely to receive some paid LTSS, including Medicaid-financed nursing home care, than those with more net worth.

People are much more likely to develop health problems and need personal care as they move through their 70s, 80s, and 90s than at younger ages. Nearly two-thirds (65 percent) of adults who did not have ADL or IADL limitations at ages 70 to 75 develop serious LTSS needs by age 96 (Table 6). Forty-five percent receive some paid LTSS by age 96, 25 percent receive long-term nursing home care, and 10 percent receive Medicaid-financed nursing home care. Women are more likely than men to develop serious LTSS needs by age 96 and receive some paid LTSS, partly because women tend to live longer than men and are less likely to be married.

As we saw at younger ages, people in their early 70s with limited income and wealth are more likely to develop serious LTSS needs by age 96 and receive paid LTSS than those with more financial resources. However, the income- and wealth-related differences in paid LTSS receipt are narrower for people who develop LTSS needs at older ages than at younger ages. For example, 53 percent of those with no more than $20,000 in annual per capita household income at ages 70 to 75 receive some paid LTSS by age 96, compared with about 43 percent of those with per capita incomes that exceed $20,000 per year. The likelihood of receiving paid LTSS does not vary much with baseline income for people with more than $20,000 in annual per capita income. Nonetheless, the receipt of Medicare-financed nursing home care remains closely tied to baseline income among older people. Only 4 percent of adults who received more than $60,000 in annual per capita household income at ages 70 to 75 received Medicare-financed nursing home care by age 96, compared with 23 percent of those with baseline annual per capita income that did not exceed $20,000. People with substantial net worth at ages 70 to 75 were also less likely to develop serious LTSS needs, receive any paid LTSS, and receive long-term nursing home care than those with little net worth, although the differences were not large. However, people with substantial net worth at baseline were especially unlikely to subsequently obtain Medicaid financed nursing home care.

Among people ages 70 to 75 without any ADL or IADL limitations, those with limited income and wealth tend to develop LTSS needs and receive paid LTSS sooner than those with more income. Table 7 reports the prevalence of serious LTSS needs and receipt of paid LTSS by age 84 for this sample. Those with no more than $25,000 in per capita household net worth were 14 percentage points more likely to develop serious LTSS needs by age 84 than those with more than $250,000 in per capita household net worth (39 versus 25 percent), and they were 6 percentage points more likely to receive paid LTSS (20 versus 14 percent).

Duration of LTSS Needs and Paid LTSS. Older people with limited income and wealth experience disabilities longer than those with more financial resources. Overall, 22 percent of adults who reached their early 70s without any ADL or IADL limitations subsequently experienced serious LTSS needs for more than four years, including 15 percent of men and 26 percent of women (Table 8). Thirty-one percent of adults who received no more than $20,000 in per capita household income when they were in their early 70s had serious LTSS needs for more than four years, compared with 17 percent of those who received more than $60,000 in per capita household income.

Spells of paid LTSS use and nursing home stays also tend to last longer for those with limited financial resources. People with no more than $20,000 in per capita household income when in their early 70s were nearly twice as likely to receive paid LTSS for than four years as those with more than $60,000 in per capita household income (22 versus 12 percent) (Table 9). Similarly, people with no more than $25,000 in per capita household net worth when in their early 70s were three times as likely to spend more than four years in a nursing home as those with more than $250,000 of per capita household net worth (6 versus 2 percent) (Table 10).

Baseline Wealth among Older People with and without Future LTSS Needs. People who develop serious LTSS needs at older ages and receive paid LTSS, especially before age 85, generally have much less wealth than people who do not develop serious LTSS needs. Table 11 compares the distribution of total household wealth in 1992 for a sample of HRS respondents ages 53 to 61 with no ADL limitations at that time, by subsequent LTSS needs and use through 2014, when surviving sample members were ages 75 to 83. Median household net worth was $271,300 for those who by 2014 never reported serious LTSS needs. By contrast, median wealth was $179,800 for people who had serious LTSS needs for no more than two years and only $130,300 for people who had serious LTSS needs for more than four years, just 48 percent as much as people who never developed serious LTSS needs. These disparities existed throughout the wealth distribution, although they were starker near the bottom of the distribution than near the top. In 1992, 11.9 percent of adults ages 53 to 61 who experienced more than four years of serious LTSS needs by 2014 did not have positive net worth, compared with only 3.8 percent of those who never developed serious LTSS needs.

People who received more than two years of any paid LTSS or nursing home care by age 83, or who received any Medicaid-financed nursing home care, also had much less net worth at ages 53 to 61 than those who did not receive any paid LTSS. Median per capita household net worth was $130,300 at ages 53 to 61 for those who received more than two years of paid LTSS, only about half as much as the median for those who did not receive any paid LTSS. Among those with more than two years of paid LTSS, 13.8 percent had zero or negative net worth at ages 53 to 61.

Disparities in financial resources by subsequent LTSS needs were especially striking for non-housing wealth (Table 12). One-half of all adults who experienced serious LTSS needs for more than four years by age 83 had no more than $41,700 in wealth other than the value of their home at ages 53 to 61, and 25 percent had no more than $4,300. Nearly one-third (32.1 percent) had no financial wealth at ages 53 to 61, and one-half had no more than $11,600.

Wealth differences between those who did and did not subsequently develop serious LTSS needs and receive paid LTSS were smaller but still significant for those who developed health problems at older ages. Table 13 compares the distribution of total household wealth in 1993 for a sample of HRS respondents ages 70 to 75 with no ADL or IADL limitations at that time, by subsequent LTSS needs and use through 2014, when surviving sample members were ages 91 to 96. Median household net worth was $265,200 for those who by 2014 never reported serious LTSS needs and $160,400 – 40 percent less – for people who had serious LTSS needs for more than four years. Median household net worth at ages 70 to 75 was 20 percent less for those who received more than four years of paid LTSS by ages 91 to 96 than for those who never received any paid LTSS, and it was 30 percent less for those who received more than four years of nursing home care by ages 91 to 96 than for those who never received any nursing home care.

However, people with no disabilities in their early 70s who subsequently experienced lengthy spells of serious LTSS needs had much less non-housing wealth and financial wealth than those who never experienced any serious LTSS needs (Table 14). Median non-housing wealth was 65 percent less for those who had serious LTSS needs for more than four years than for those who never had any serious LTSS needs, and median financial wealth was 67 percent less.

Household wealth disparities were larger among people who developed LTSS needs and received paid LTSS before age 85 than afterwards. Among adults ages 70 to 75 with no ADL or IADL limitations at that time, median household net worth was $57,100 for those who experienced serious LTSS needs for more than two years by age 85, 46 percent less than the median among those who did not experience any serious LTSS needs by age 85 (Table 15). Median net worth at ages 70 to 75 was 30 percent less for those who received paid LTSS by age 85 than for those who did not, 25 percent less for those who received at least 90 days of nursing home care than for those who did not, and 72 percent less for those who received Medicaid-financed nursing home care than for those who did not. Again, disparities in non-housing wealth and especially household financial wealth were even larger (Table 16).

Simulating Policy Options

Socioeconomic differences in the likelihood of developing LTSS needs and receiving paid LTSS and in the expected duration of LTSS needs and services use shape the likely impact of programs designed to help older people finance paid LTSS use. We simulated multiple policy options that illustrated the range of potential effects. Table 17 shows the different versions of caregiver tax credits that we simulated, arranged from the most expansive (to the left of the table) to the least expansive (to the right of the table). As with all the scenarios from the various proposal classes, the combinations we chose for the tax credit are illustrative. A credit of up to $2,500 – covering up to 25 percent of expenses – is available for those paying out-of-pocket (or, in some cases, losing wages) to help a severely disabled family member. Given the large number of combinations of parameters of potential interest, we selected only a subset to demonstrate some of the effects of selected parameters. If we were to combine the parameter changes in a different order, then their marginal effects would generally differ. In some cases, the preceding parameter may have had a large effect on the proposal's socioeconomic effects, such as by excluding a large share of higher- or lower-income people, so the marginal effect of the next parameter may be smaller because of the stacking than it would be if we examined it on its own.

Table 18 shows the versions of the respite care benefit that we modeled. They include some that offer broad coverage for a range of people with different relationships to care recipients, some that target only non-spouse caregivers, and some restricted to helping only employed non-spouse caregivers to help keep them in the labor force. Each option would offer a maximum of 10 or 15 days per year of respite care for caregivers of people who meet a severe disability standard.

Table 19 shows the different versions of the social insurance benefit that we modeled. We handle the stacking of options somewhat differently in this policy class than when considering tax credits and respite care. In each version of the social insurance benefit, we altered a single parameter or parameter set, but we did not model the effects cumulatively as we generally did in the prior two classes of policy proposals.

In the social insurance simulations, we focused on a benefit level of $90 per day, which is generally consistent with recent state-level social insurance proposals. (For example, Washington State's feasibility study used a $100 daily benefit, and Hawaii's recent legislation set benefits at $70 per day.[11]) A $90 daily benefit is also generally consistent with an HCBS

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[11] Hawaii Senate Bill 2478 and House Bill 1885 of the 2016 legislative session proposed this benefit. More recent (2017) legislation focuses instead on caregiver support through Kupuna care, Hawaii's program to help non-Medicaid eligible disabled elders remain in the community.

benefit focus. In most states, it would cover a few hours per day of HCBS but less than a half-day in a nursing home (Genworth, 2017). We modeled a front-end, time-limited benefit to control the potential financial risk to the government. Such benefits could be targeted to working caregivers, providing them very substantial, effectively daily respite – much more so than under the respite credit, which is only available for about one day a month. The program has a 90-day elimination period, selected because of its approximate integration with Medicare. (Medicare's Skilled Nursing Facility Benefit ends after day 100.)

To show the sensitivity of outcomes to program details, we simulated various alternatives that differ along the following dimensions: the eligibility phase-in (SI2), the benefit trigger (SI3), the benefit form (SI5), and voluntary enrollment instead of mandatory enrollment (SI6). We also considered variable benefits based on disability severity (SI4), as in the French system of personal autonomy allowances, described by Ministère des Affaires Sociales et de la Santé, République Française (2017) and discussed by Doty, Nadash, and Racco (2015). The specific version we examined would grant the highest benefit – $100 per day – to those with four or more limitations in ADLs and especially severe cognitive impairment, the standard benefit – $90 per day – to those with three or more ADL limitations, and a lower benefit – $70 per day – to those with two ADL limitations.

Projection Methods

We simulated the impact of caregiver tax credits, respite care, and new social insurance programs that would finance LTSS using DYNASIM, the Urban Institute's dynamic microsimulation model (Favreault, Smith, and Johnson 2015). DYNASIM was recently extended to include medical care and LTSS projections, and we have used it to generate initial projections of LTSS spending (Favreault and Dey, 2015; Favreault, Gleckman, and Johnson, 2015) and consider caregiving trajectories (Favreault, Butrica, and Mudrazija, 2017). The LTSS relationships in the model are based mainly on equations estimated from longitudinal data from the HRS and MCBS and calibrated to a wide range of other data, including the National Health and Aging Trends Study (NHATS) and the earlier National Long Term Care Survey, and both aggregate and distributional estimates from the published literature.

The version of DYNASIM that we use – DYNASIM4 – differs in several key respects from an earlier version of DYNASIM that we used in our prior, related analyses. First, it starts with a later starting sample, the 2004 and 2008 SIPP panels rather than the 1990 through 1993 panels used in DYNASIM3. Second, it updates many key assumptions, including the economic and demographic assumptions from the Social Security and Medicare Trustees Reports. Our earlier analyses used a baseline with 2014 Trustees assumptions, and we now use 2017 assumptions (Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds 2017; Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds 2017).[12] We update information on LTSS prices as soon as they become available, usually annually (Genworth 2017, Eljay Hansen Hunter 2016/2017). Also, we have updated the health expenditures model to include data from the 2011 through 2013 MCBS (rather than 2007 through 2009 MCBS in the earlier version). This update is important because eligibility for Medicaid is a function of out-of-pocket health and LTSS spending, and using the most recent data helps insure that we account for ongoing changes in service delivery and cost sharing for both acute care and LTSS.

We have also adjusted many other components of DYNASIM over the past several years. We generally re-estimate the most critical equations every few years, as new data become available. For example, we re-estimated our SIPP-based mortality model to integrate more years of data and better capture recent trends in differential mortality documented in other literature (Bosworth, Burtless, and Zhang, 2015; Case and Deaton, 2015; Waldron, 2007, 2013).

The viability of LTSS proposals, including major changes like social insurance, depends partly on the lifetime incomes of people who eventually receive LTSS. Assessing how much financial protection any new LTSS program would provide depends partly on the financial status of beneficiaries. It is important, then, that our projections accurately represent the lifetime earnings of older adults who eventually receive LTSS, that it generates historical experiences faithfully, and that its projections fall within the observed estimates from the literature. We validate our projections by comparing the distribution of lifetime earnings for LTSS users and

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[12] The 2017 Trustees Report differed the earlier 2014 report in several ways, including slower mortality decline, more immigration, and a higher real wage differential. To cite a specific example, cohort mortality declined for those reaching age 65 in 2017 (the 1952 birth cohort), from 19.49 years for men and 21.77 for women in the 2014 Trustees Report to 19.17 and 21.62, respectively, for men and women in the 2017 Trustees Report. This implies a greater gap in men's and women's mortality, an important metric for caregiver availability and economic well-being (due to declines in economic well-being). Although the real wage growth rate is higher in the 2017 Trustees Report than the 2014 report, the 2017 assumptions start from a lower value. In the 2014 Trustees Report, actuaries projected that the value for the average wage index would be $54,052.13 in 2017; in the 2017 report, they estimated it to be $51,314.31, more than 5 percent lower. This will have important implications for cost values.

nonusers in DYNASIM with the distribution observed in the MCBS and HRS. Our forthcoming validation report shows how costs and number of beneficiaries in DYNASIM line up with the most recent historical data by payer (Medicaid, private insurance, LTSS benefits from the Veterans Administration [VA] or provided under the Older Americans Act [OAA]). We validate our projections of caregiver prevalence, which are based on the HRS, against data from the NHATS and its companion National Study of Caregiving (NSOC). We derive data for caregivers' out-of-pocket expenses from Rainville, Skufca, and Mehegan (2016) and validate these against NSOC tabulations, which used categorical coding and sophisticated sampling. Favreault and Spillman (2017) and Favreault, Butrica, and Mudrazija (2017) describe these choices in earlier, related work.

Several important projection assumptions are likely to vary by the specific proposals. For example, each of the proposals is sensitive to assumptions about benefit take-up, but we expect that patterns could differ markedly across proposal classes and even across options within classes. The effects of a refundable caregiver tax credit will depend critically on how – and how quickly – those who do not file personal income taxes under current law learn about and respond to the new credit. The effects of a non-refundable tax credit are likely to be far less responsive to this group's choices, as most will remain non-filers unless the credit induces large change in work behavior, for example. Cash LTSS benefits historically have much higher take up than service reimbursement benefits, and the literature documents that those with higher economic need are more likely to take up benefits than those with less need and that take-up rates increase as benefits become more generous. We err on the side of conservatism and tend to assume high take-up for each of the proposals, in line with the best literature we can find. For example, Montgomery (1988), provides important information on respite care take-up, even though it is dated, because the study was based on an experiment. On the tax credits, we assume differential take-up for filers and non-filers.[13] We also assume that there will be some "inflation" in ADL assessments (sometimes referred to as "ADL creep"), in line with sensitivity analyses in past literature (Murtaugh, Spillman, and Warshawsky, 2001).

Another issue is behavioral feedback (e.g., whether respite care could slow the progression of some care recipients from community residence into institutions or the tax credit for lost wages would deter some caregivers from quitting their jobs). We ignore the potential for

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[13] We assume 90 percent take up for filers and 80 percent take up for non-filers.

such feedbacks in these analyses given a lack of strong evidence about the direction and magnitude of the effects in the literature (e.g., on respite, Guo et al. 2015; Mason et al. 2007; Spillman 2016; Vandepitte et al. 2016). We also ignore any distributional or macrodynamic effects of caregivers staying in the labor force longer because of the interventions.

Samples and Evaluation Time Periods. Because the proposals would have different phase-in periods – with the social insurance program having a particularly long phase-in to permit prefunding – and would affect different age groups, we examine the effects of each using different samples. Our main analyses that compare all three proposal classes are cross-sectional and focused on the near term (the next 10 years, as is conventional for many similar analyses).

We consider the tax credit's effects on people ages 25 and older. For the respite care benefit and social insurance benefits, we consider a sample of people ages 65 and older in the cross-section.

For the social insurance options, we also conduct analyses in which we focus on lifetime outcomes for members of the 1976 through 1980 birth cohort, who would have spent much of their lives under the new programs, as we describe in the next section. This allows us to account for the full range of experiences with the programs over a lifetime.

Outcome Measures and Key Classification Variables in the Simulations. In the cross-sectional analyses, our key outcome measure is the share of new benefits from the intervention directed to people in various financial quintiles. This outcome measure is robust to the size differences across options and makes it possible to compare different populations. We examined three measures of economic status: per capita family income quintiles, poverty-scale-adjusted family income quintiles, and family wealth quintiles. The poverty-scale adjustments, based on how the federal poverty level varies with family size, accounts for household economies of scale. Our income measure includes earnings, Social Security benefits, pension benefits, and the annuitized value of financial wealth for both oneself and one's spouse, where applicable.

By way of context, the Census Bureau (Semega, Fontenot, and Kollar 2017) estimated that in 2016 households in the lowest quintile had incomes of $24,002 or less, with an average income of $12,943. Households in the second quintile had incomes between $24,003 and $45,600, with an average of $34,504. Those in the third quintile had incomes between $45,601 and $74,869, averaging $59,149, and those in the fourth quintile had incomes between $74,870 and $121,018, averaging $95,178. Households in the highest quintile had incomes of $121,019 or more, with an average of $213,941. The top 5 percent of households in the income distribution had incomes of $225,251 and higher, and an average income of $375,088.[14]

We also examined the social insurance benefit proposals using a longer-range framework.[15] We computed the present value of total lifetime benefits (not just annual benefits) that people in different economic groups might expect to receive, and showed how this measure varies by income at age 65 and by lifetime family earnings. For single people, we defined lifetime family earnings as the present value of wage-indexed earnings summed from age 25 through retirement or death. In a year in which a person was married, the calculation used the average earnings of the two partners. This lifetime perspective illustrates an important distributional aspect of insurance: not only does insurance in this context redistribute from those who never become disabled or never need to care for a frail family member to those who become disabled or need to step in to help a family member with severe disabilities, it also redistributes from those who do not survive until they qualify for the first benefit or until they vest to those who do survive that long. Many researchers examine other social insurance programs, like Social Security, in this way, and a burgeoning literature considers how recent increases in income differentials in mortality affect social insurance redistribution (Bosworth, Burtless, and Zhang, 2015; National Academies of Sciences, Engineering, and Medicine, 2015).

Results

Table 20 describes how gross benefits (i.e., benefits without netting out contributions made through taxes, premiums, or other funding) from the 18 proposals would be distributed across income and wealth quintiles. Each entry in the table represents the share of total gross new benefits that would be directed toward those in the given income or wealth quintile displayed under each proposal.

The various caregiver tax credits (CTC1 through CTC6) tend to benefit those in the middle and highest income quintiles proportionately more than those in lower income quintiles. This is especially true of the non-refundable credits (CTC4 through CTC6), which generally do

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[14] DYNASIM projects slightly higher incomes, because we believe it better accounts for certain forms of income at older ages that appear to be underreported in census data (Bee and Mitchell 2017).

[15] We could in theory also examine the caregiver tax credit and respite care benefits in a lifetime framework, although this is less conventional for tax-benefit analyses than for analyses of social insurance programs.

not help people in the lowest quintile much because many have no personal income tax liability.[16] This income and wealth pattern also occurs partly because caregiving generally occurs mostly in late career, when earnings often peak and people are saving more aggressively for retirement. Another contributing factor is that those with higher incomes simply have more disposable income that they can devote to a care recipient. Previous literature has documented an income gradient in out-of-pocket caregiving expenditures (see, for example, Rainville et al., [2016]).

Although refundability may have particularly conspicuous effects on the proposals' distributional impacts, other policy choices also have important effects. The $1,000 deductible for expenses limits redistribution to the bottom of the financial distribution because those with less income generally incur lower out of pocket expenses than those with more income (compare CTC2 to CTC1); lower-income people may contribute proportionately more in uncompensated family care. Phasing out the credit for those with higher incomes of course reduces the share of benefits going to those in the top quintile (compare CTC2 to CTC3). Employment-related parameters, such as those that exclude lost wages from the tax credit's base (CTC5) and restrict benefits to workers (CTC6), tend to push benefits up the income distribution. These changes reflect in part the relative age and income distributions of workers and non-workers. Lower income workers are often more likely to donate hours to care recipients than finance paid care, but workers often have higher incomes than same-aged non-workers.

We generally see proportionately more benefits going to higher quintiles when we compare results using income poverty-scale-adjusted quintiles, which account for household economies of scale, than when using per capita income quintiles, which assume no economies of scale, because many caregivers live in married-couple families; assuming that a family needs less for each additional person tends to shift people's places in the income distribution.

The various respite care benefits (RC1 through RC6) direct proportionately more benefits to people lower in the income distribution relative to the caregiver tax credit. Not allowing those care recipients with only spouse caregivers to receive respite (options RC4 through RC6) leads to

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[16] The Tax Policy Center describes the distribution of personal income and payroll taxes by several different income dimensions. See: http://www.taxpolicycenter.org/model-estimates/distribution-federal-payroll-and-income-taxes-july-2016/t16-0129-distribution.

an even greater concentration of benefits toward those lower in the income distribution. Otherwise, the distributional differences across the options are relatively small.

Most of the social insurance options that we model (SI1 through SI6) fall between the tax credit options and the respite care options in terms of the shares of benefits directed to those in high or low income and wealth quintiles in the cross-section. The key exception to this pattern is that under the voluntary option (SI6 compared to SI1 through SI5), we project that more benefits would go to those higher in the income distribution. Another important distributional difference is that delaying the premium start date directs proportionately more benefits to higher income quintiles and especially higher wealth quintiles (compare SI2 to SI1), because many people most likely to experience late-life disability would not vest, in some cases because they left the labor force due to early-onset disabilities.[17] Restricting the program to those with higher levels of disability, in this care three or more ADL limitations and an even higher cognitive impairment standard (compare SI3 with SI1) increases redistribution to those in lower income and asset quintiles. This outcome is consistent with the patterns in disability we document earlier in the paper. Options that provide larger benefits to those with more severe disabilities (SI4) similarly direct a larger share of benefits to those lower in the income distribution. Also, the option with the longer elimination period (SI5) pays a greater share of benefits to those in the lower quintiles than the baseline proposal. In combination, these latter three findings suggest that both intensity and duration of disability are associated with lower socioeconomic status.

Table 21 presents a longer-range metric for the six social insurance proposals. When we consider the benefit payments from the programs from age 65 to death, we see more redistribution toward higher quintiles. No doubt this occurs because fewer people with lower cross-sectional or lifetime earnings vest in the program, and fewer survive until age 65.

Caveats

The proposals that we have modeled and presented just scratch the surface of the spectrum of ideas that have been advanced in recent years to improve financing of LTSS and address the burden of unpaid family caregivers who provide a substantial share of total LTSS.

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[17] Such effects could be especially important when phasing in the new program if older workers were included and the vesting period were the same regardless of how close one is to the benefit eligibility age.

We recognize that there are many other ideas worthy of in-depth study, and hope to continue to address some of these in future work.

Another important caveat is that there are significant challenges in measuring LTSS needs and quantifying experiences of those relying on LTSS or providing care to them. For example, most major studies of home care ask about use of formal services over the past month. This leaves analysts with very limited ability to obtain annual estimates on home care use. Similarly, studies of out-of-pocket caregiver expenditures, although often quite detailed, rarely include adequate detail to allowable and unallowable expenses. Such data may be subject to recall bias and social desirability bias.

Finally, we have focused on one important dimension of these proposals' effects – how they would be distributed by income and wealth quantiles. This measure of progressivity is an important one, but there are many other aspects of the proposals that are worthy of consideration, including their equity and efficiency. Another useful supplement would be to augment the estimates of gross benefits with estimates of net benefits (after accounting for contributions that have been paid or cross-transfers that have been made).

Conclusion

Our goals for these analyses have been threefold. We first wanted to describe the economic profile associated with LTSS needs and use. We then wanted to describe the potential distributional properties of a range of different interventions, just a small selection from the vast spectrum of possibilities for supporting people with severe disabilities and their caregivers that have been discussed in recent years. Finally, we wanted to illustrate a method for exploring relative distributional differences among some very different financing proposals in as internally consistent a manner as possible.

We documented the higher LTSS needs and utilization of paid services of nursing home care – both cross-sectionally and longitudinally – particularly for those with less education.

The analyses also reveal important distributional differences both within and across the various types of interventions geared at supporting older adults with severe disabilities and their family caregivers. For example, we find that tax credits for caregivers' out-of-pocket expenses tend to be relatively proportionate to income and wealth compared to proposals for respite care benefits, which are more likely to target those in the bottom two quintiles of the income distribution. Many of the mandatory social insurance proposals fell in between. The analyses also reveal the usefulness of supplementing cross-sectional analyses with longitudinal ones. By its very nature, insurance – whether social or private – redistributes to those who experience an unfortunate event from those who do not. In the U.S. context, those with less education are more likely to need LTSS but are also more likely to die prematurely.

Details within proposal classes can be important, in some cases about as important as differences across them. In the case of the tax credits, refundability and income phase-outs have large effects. Other provisions' effects are sometimes large, but can be sensitive to the stacking order. In the case of respite care, whether one permits those with only spousal caregivers to take advantage of the respite benefit will shape its effects. And in the case of social insurance, whether a program is mandatory or voluntary will have key effects, with voluntary programs more likely to reach those with higher incomes and wealth. Programs with more restrictive disability criteria or benefits that increase with disability severity will be more redistributive toward those lower in the income distribution.

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Table 1. *Benefit Policy Provisions that Shape Generosity-Comprehensiveness, Progressivity, Targeting of Risk, and Interactions*

Proposal Class	**Selected Policy Levers and Interactions that Could Shape Costs and Distributional Effects**					
	Comprehensiveness/ Generosity	***Progressivity***	***Target Efficiency (Disability Risk and Severity)***	***Work or Savings Incentives***	***Program Interactions, Overlap, etc.***	***Adverse Selection and Moral Hazard***
Social Insurance	Size; whether size depends on disability level; duration; indexing of benefit; allowable services; form of benefit (cash, service); mandate	Matching contributions/premium subsidies; structure of deductible (e.g., HIPAA time versus OOP spent on services)	Benefit triggers; waiting period (elimination period)	Vesting; minimum earnings	Medicaid; SSI	Mandates, vesting, employment tie and minimum earnings, benefit form, auto-enroll
Respite Care Benefits	Number of days/nights; allowable relationship to care recipient	Income related co-payments	Benefit triggers; waiting period (elimination period)	Restrict to caregivers with a minimum earned income	Medicaid, VA respite, respite through National Family Caregiver Support Program; Medicare (e.g., Chronic Care Management)	Service limits, screening of care recipients
Tax Incentives for Family Care	Level and type of expenses covered: out-of-pocket costs, lost wages, both; first dollar or after deductible period; relationship to care recipient	Income cap or income-related phase-out; refundability; rate structure	Benefit triggers; deductible	Restrict to caregivers with a minimum earned income	Filing status, medical expense deduction, dependent care tax credit, stacking effects	Mandatory recordkeeping; audits to insure compliance; third party-reporting to improve compliance
Tax Incentives for LTCi Purchase	Maximum size	Integrated with the personal income tax code, which has implied progressivity dependent on rates, exclusions, limits; state taxes can also be relevant (Baer and O'Brien 2010)	Benefit triggers in the qualifying insurance policies	May lead to some portfolio shifting	Medicaid (through partnership programs)	Most plans use underwriting to control

Auto-Enrollment for LTCi Purchase	Likely restricted to workers	Match based on income	Benefit triggers in the qualifying insurance policies	Sometimes discussed in context of defined contribution plan savings, which could be reduced rather than supplemented		Most plans use underwriting to control
Medicaid LTSS	Payment rates, allowable services, and service limits	Income tests, asset tests (including lookbacks, estate recovery), home equity limits, maintenance needs allowances, spousal impoverishment protections.	Benefit triggers; some states target some resources toward those with specific diseases or impairments (e.g., dementia)	Disincentive to savings and employment	SSI; FMAP; partnership programs	

Note: Many elements of the matrix could be classified in more than one column. For example, first dollar and refundability affect both the comprehensiveness and progressivity of tax credits. The table focuses on policy effects and interactions, but various demographic effects and interactions, like differential mortality and morbidity, will also shape effects for many of the policy classes in important ways.

LTCi = long-term care insurance.

Table 2. *Selected Financing Possibilities and Literature on their Distribution*

Financing approach	**Choices with important distributional effects**	**Selected literature describing distributional effects and incidence assumptions**
Dedicated payroll tax	Base (e.g., OASDI versus HI); with minimum; with maximum; mix of employer and employee shares	Hamermesh (1979); most major forecasting groups and distributional modelers assume employee pays employer share (e.g., CBO 2015); most assume wages are offset with an employer share increase (e.g., CBO 2015)
Premiums	Starting ages will affect level; level or non-level (current insurance regulations limit options); type of underwriting/other controls for adverse selection	Giese and Schmitz (2015); Giese et al. (2017)
Dedicated consumption taxes, including Value Added Tax (General Excise Tax in earlier Hawaii legislation)	Base (whether it includes or excludes needs like food, housing, and shelter); method (subtraction method, credit method); with or without refundable credit	Nunns and Rosenberg (2016); Toder and Rosenberg (2010)
User fees/co-payments/deductibles	Income-relating, disability-relating; income effects may enter in	Swartz (2010); Roquebert and Tenand (2017); Kiil and Houlberg (2013)
General revenue, which implicitly links to personal income tax	Current structure, including bases, rates, exclusions, deduction, limits, etc.	Treasury (https://www.treasury.gov/resource-center/tax-policy/tax-analysis/Documents/Summary-of-Treasurys-Distribution-Analysis.pdf); Cronin (1999)
Dedicated financial transaction taxes (broad term encompassing securities transaction taxes, currency transaction taxes, bank transaction taxes, other) (see Matheson 2011)	Geographic reach, types of securities covered, types of markets subjected (exchange based, over the counter), treatment of government debt, treatment of market makers (financial institutions), ad valorem or flat fee, level of international coordination	Burman et al. (2016); Matheson (2011)

Note: Many financing combinations are possible, such as premiums combined with payroll or personal income taxes, and co-payments combined with taxes.

Table 3. *Prevalence of Disability at Ages 65 and Older under Four Alternative Measures, by Age and Education (%)*

	65-69	70-74	75-79	80-84	85-89	90-94	95+	All
Difficulty with an ADL								
No high school diploma	17.6	18.4	21.6	25.7	34.2	34.3	45.1	23.8
High school diploma	12.2	9.6	14.7	17.7	25.5	27.7	43.3	15.4
Some college, vocational, or associate's degree	10.2	12.4	15.9	20.9	24.4	34.8	33.4	14.9
Bachelor's degree or more	4.2	8.1	10.4	14.9	23.5	31.1	30.6	9.9
Received ADL help								
No high school diploma	6.7	7	7.2	10.9	17.3	19.6	29.2	10.3
High school diploma	3.2	2.6	5.1	7.2	11.3	13.3	22.9	5.6
Some college, vocational, or associate's degree	2.4	3.1	4.7	7.4	9.2	16.2	23	4.6
Bachelor's degree or more	1.4	2.7	3.1	4.6	10.8	12.4	20.6	3.5
Received ADL help for at least 90 days								
No high school diploma	6.3	6.2	6.8	9.7	15.8	18.1	29.2	9.5
High school diploma	3.2	2.6	4.9	6.8	10.4	12.9	21.6	5.3
Some college, vocational, or associate's degree	1.9	2.8	4.2	6.2	8.4	13.7	19.3	4
Bachelor's degree or more	1.4	2.1	2.9	4	10	11.1	20.6	3.2
Received ADL help for at least 90 days or reported Alzheimer's disease or dementia								
No high school diploma	8.8	12.1	13.9	22.9	30.7	37.3	50.8	18.5
High school diploma	5.3	6.2	11.4	14.5	21.8	31.8	52.2	11.5
Some college, vocational, or associate's degree	3.5	5.2	7.7	13	23.1	29	35	8.2
Bachelor's degree or more	2.5	4.5	7.6	11.1	20.2	28.3	37.9	7.2
Number of observations	5,988	5,502	5,047	5,171	3,547	1,714	535	27,529

Source: Authors' estimates from the Medicare Current Beneficiary Study (2011-2013).
Note: ADLs included bathing, dressing, eating, transferring, walking, and toileting. The final disability definition (in the right-most set of columns) resembles the definition described in the Health Insurance Portability and Accountability Act (HIPAA) but is not equivalent. HIPAA requires severe cognitive impairment, but the MCBS does not include adequate questions about the severity of cognitive impairment to make this distinction. Also, the HIPAA definition includes continence, which the survey did not ask all respondents. Finally, HIPAA requires that an individual be unable to overcome ADL limitations through assistive equipment,[18] which cannot be assessed in the MCBS. Weights account for pooling and size of the three panels.

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[18] Stallard (2011) states the following about the HIPAA standard: "Chronicity was an integral part of the eligibility definition: HIPAA clearly excluded acute care needs from the benefit triggers of qualified LTC insurance policies. HIPAA's ADL trigger did not count ADLs whose limitations can be appropriately resolved by the use of special equipment such as wheelchairs, walkers, canes, crutches, handrails, ramps, bed lifts, elevators, bed-pans, portable toilets, special underwear, catheters or similar devices."

Table 4. *Prevalence of Nursing Home Use at Ages 65 and Older under Three Alternative Measures, by Age and Education (%)*

	65-69	70-74	75-79	80-84	85-89	90-94	95+	All
Currently living in a nursing home								
No high school diploma	1.7	3.0	3.8	6.6	9.3	18.9	31.5	6.0
High school diploma	1.2	2.3	3.3	3.8	9.5	15.5	35.1	4.2
Some college, vocational, or associate's degree	0.6	0.8	1.4	3.0	7.7	11.9	15.8	2.1
Bachelor's degree or more	0.4	0.6	1.3	2.1	4.4	8.8	17.6	1.5
Made a payment to a facility in the past year								
No high school diploma	2.6	4.7	5.2	8.7	11.8	24.0	36.1	7.9
High school diploma	1.7	3.0	4.1	6.0	12.5	28.1	46.4	6.0
Some college, vocational, or associate's degree	0.8	0.9	2.1	5.5	14.0	19.7	24.2	3.4
Bachelor's degree or more	0.9	0.7	1.7	4.9	7.7	22.2	26.2	2.8
Medicaid made a payment to a nursing home in the past year								
No high school diploma	1.2	3.4	3.5	5.8	7.1	12.1	24.1	4.9
High school diploma	0.7	1.6	2.0	3.0	4.7	8.0	21.4	2.5
Some college, vocational, or associate's degree	0.3	0.6	1.1	1.5	5.0	6.0	12.3	1.3
Bachelor's degree or more	0.1	0.3	0.5	1.0	0.8	2.6	2.7	0.5
Number of observations	5,988	5,502	5,047	5,171	3,547	1,714	535	27,529

Source: Authors' estimates from the Medicare Current Beneficiary Study (2011-2013).
Note: Weights accounted for pooling and size of the three panels. The analysis used information about facilities, focusing on long-stay nursing homes and excluding post-acute stays in rehabilitation facilities.

Table 5. *Probability that Adults Ages 51 to 61 Develop Serious LTSS Needs and Receive Paid LTSS by Age 83 (%)*

	Serious LTSS needs	*Paid LTSS*	*Nursing home care*	*Medicaid-financed nursing home care*
All	39	20	9	4
Sex				
Men	39	16	8	4
Women	40	24	10	4
Race and ethnicity				
Non-Hispanic white	39	19	9	4
Non-Hispanic black	46	26	11	7
Hispanic	42	19	5	4
Education				
Not high school graduate	50	23	11	7
High school graduate/some college	38	18	8	4
Four-year college degree	32	23	11	2
Per capita household income				
$20,000 or less	48	25	11	8
$20,001 to $40,000	39	21	10	5
$40,001 to $60,000	42	21	10	2
More than $60,000	30	13	6	2
Per capita household net worth				
$25,000 or less	47	26	10	8
$25,001 to $100,000	42	20	10	5
$100,001 to $250,000	39	19	10	3
More than $250,000	34	18	7	1
Per capita household nonhousing wealth				
$5,000 or less	47	29	14	11
$5,001 to $50,000	42	18	8	5
$50,001 to $150,000	40	20	10	2
More than $150,000	33	18	8	1
Per capita household financial wealth				
Zero or negative	49	27	11	9
$1 to $20,000	41	17	7	4
$20,001 to $100,000	39	20	11	4
More than $100,000	32	19	8	1

Source: Authors' estimates from the HRS.

Note: Estimates were based on a sample of 7,791 adults ages 51 to 61 in 1992 who did not report any ADL limitations at that time. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from hazard functions estimates from each outcome. Financial resources were measured at the baseline 1992 interview and expressed in inflation-adjusted 2017 dollars.

Table 6. *Probability that Adults Ages 70 to 75 Develop Severe LTSS Needs and Receive Paid LTSS by Age 96 (%)*

	Serious LTSS needs	*Paid LTSS*	*Nursing home care*	*Medicaid-financed nursing home care*
All	65	45	25	10
Sex				
Men	61	35	19	6
Women	68	53	31	14
Race and ethnicity				
Non-Hispanic white	65	45	26	9
Non-Hispanic black	69	45	24	16
Hispanic	59	42	19	12
Education				
Not high school graduate	65	44	24	13
High school graduate/some college	65	44	26	11
Four-year college degree	65	47	24	4
Per capita household income				
$20,000 or less	69	53	33	23
$20,001 to $40,000	66	43	25	9
$40,001 to $60,000	63	43	22	9
More than $60,000	62	44	23	4
Per capita household net worth				
$25,000 or less	67	47	28	20
$25,001 to $100,000	69	47	28	15
$100,001 to $250,000	62	39	26	6
More than $250,000	62	42	20	3
Per capita household nonhousing wealth				
$5,000 or less	68	47	27	19
$5,001 to $50,000	68	46	30	15
$50,001 to $150,000	62	42	26	6
More than $150,000	61	44	20	3
Per capita household financial wealth				
Zero or negative	64	42	23	16
$1 to $20,000	67	47	30	16
$20,001 to $100,000	67	46	27	10
More than $100,000	60	44	21	3

Source: Authors' estimates from the HRS.

Note: Estimates were based on a sample of 2,576 adults ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from hazard functions estimates from each outcome. Financial resources were measured at the baseline 1993 interview and expressed in inflation-adjusted 2017 dollars.

Table 7. *Probability that Adults Ages 70 to 75 Develop Severe LTSS Needs and Receive Paid LTSS by Age 84 (%)*

	Serious LTSS needs	*Paid LTSS*	*Nursing home care*	*Medicaid-financed nursing home care*
All	31	15	8	3
Sex				
Men	31	12	6	2
Women	31	27	9	4
Race and ethnicity				
Non-Hispanic white	30	15	7	3
Non-Hispanic black	42	20	10	6
Hispanic	36	18	7	6
Education				
Not high school graduate	36	17	8	4
High school graduate/some college	31	15	7	3
Four-year college degree	23	13	7	1
Per capita household income				
$20,000 or less	38	21	12	8
$20,001 to $40,000	33	15	8	2
$40,001 to $60,000	30	14	6	2
More than $60,000	25	13	6	1
Per capita household net worth				
$25,000 or less	39	20	10	7
$25,001 to $100,000	36	18	10	4
$100,001 to $250,000	26	10	5	1
More than $250,000	25	14	6	1
Per capita household nonhousing wealth				
$5,000 or less	42	21	11	8
$5,001 to $50,000	35	17	9	4
$50,001 to $150,000	26	13	6	1
More than $150,000	24	12	6	1
Per capita household financial wealth				
Zero or negative	38	18	9	5
$1 to $20,000	36	18	10	5
$20,001 to $100,000	28	14	7	3
More than $100,000	26	13	6	0.2

Source: Authors' estimates from the HRS.

Note: Estimates were based on a sample of 2,576 adults ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from hazard functions estimates from each outcome. Financial resources were measured at the baseline 1993 interview and expressed in inflation-adjusted 2017 dollars.

Table 8. *Expected Duration of Serious LTSS Needs, Ages 70 to 96 (%)*

	None	*Some, Less than 2 Years*	*2 to 4 years*	*More than 4 years*
All	35	29	14	22
Sex				
Men	39	32	14	15
Women	32	27	15	26
Race and ethnicity				
Non-Hispanic white	35	30	15	20
Non-Hispanic black	31	24	13	32
Hispanic	41	19	7	33
Education				
Not high school graduate	35	27	15	23
High school graduate/some college	35	30	13	22
Four-year college degree	35	28	19	18
Per capita household income				
$20,000 or less	31	26	12	31
$20,001 to $40,000	34	27	18	21
$40,001 to $60,000	37	34	11	18
More than $60,000	38	31	14	17
Per capita household net worth				
$25,000 or less	33	26	17	24
$25,001 to $100,000	31	27	17	25
$100,001 to $250,000	38	28	13	21
More than $250,000	38	31	13	18
Per capita household nonhousing wealth				
$5,000 or less	32	24	16	28
$5,001 to $50,000	32	30	14	24
$50,001 to $150,000	38	29	14	19
More than $150,000	39	31	15	15
Per capita household financial wealth				
Zero or negative	36	23	16	25
$1 to $20,000	33	29	13	25
$20,001 to $100,000	33	30	18	19
More than $100,000	40	32	11	17

Source: Authors' estimates from the HRS.

Note: Estimates were based on a sample of 1,420 adults ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time who subsequently developed serious LTSS needs. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from duration models of serious LTSS needs. Financial resources were measured at the baseline 1993 interview and expressed in inflation-adjusted 2017 dollars.

Table 9. *Expected Duration of Paid LTSS, Ages 70 to 96 (%)*

	None	*Some, Less than 2 Years*	*2 to 4 years*	*More than 4 years*
All	55	22	10	13
Sex				
Men	65	20	8	7
Women	47	24	12	17
Race and ethnicity				
Non-Hispanic white	55	23	10	12
Non-Hispanic black	55	17	10	18
Hispanic	58	18	5	19
Education				
Not high school graduate	56	23	8	13
High school graduate/some college	56	22	10	12
Four-year college degree	53	21	13	13
Per capita household income				
$20,000 or less	47	23	8	22
$20,001 to $40,000	57	21	12	10
$40,001 to $60,000	57	21	10	12
More than $60,000	56	23	9	12
Per capita household net worth				
$25,000 or less	53	22	9	16
$25,001 to $100,000	53	23	11	13
$100,001 to $250,000	61	18	10	11
More than $250,000	58	22	9	11
Per capita household nonhousing wealth				
$5,000 or less	53	22	8	17
$5,001 to $50,000	54	22	10	14
$50,001 to $150,000	58	19	11	12
More than $150,000	56	24	10	10
Per capita household financial wealth				
Zero or negative	58	17	9	16
$1 to $20,000	53	24	7	16
$20,001 to $100,000	54	21	13	12
More than $100,000	56	24	10	10

Source: Authors' estimates from the HRS.

Notes: Estimates were based on a sample of 855 adults ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time and subsequently received paid LTSS. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from duration models of paid LTSS. Financial resources were measured at the baseline 1993 interview and expressed in inflation-adjusted 2017 dollars.

Table 10. *Expected Duration of Nursing Home Care, Ages 70 to 96 (%)*

	None	*Some, Less than 2 Years*	*2 to 4 years*	*More than 4 years*
All	75	12	6	4
Sex				
Men	81	11	5	2
Women	69	13	8	4
Race and ethnicity				
Non-Hispanic white	74	13	7	3
Non-Hispanic black	76	9	7	5
Hispanic	81	9	6	3
Education				
Not high school graduate	76	12	5	3
High school graduate/some college	74	13	7	4
Four-year college degree	76	10	7	4
Per capita household income				
$20,000 or less	67	12	7	8
$20,001 to $40,000	75	13	7	2
$40,001 to $60,000	78	9	8	2
More than $60,000	77	12	5	4
Per capita household net worth				
$25,000 or less	72	13	8	6
$25,001 to $100,000	72	13	7	5
$100,001 to $250,000	74	12	7	3
More than $250,000	80	10	5	2
Per capita household nonhousing wealth				
$5,000 or less	73	12	6	5
$5,001 to $50,000	70	14	8	5
$50,001 to $150,000	75	13	7	3
More than $150,000	80	10	5	1
Per capita household financial wealth				
Zero or negative	77	8	7	3
$1 to $20,000	70	16	5	6
$20,001 to $100,000	73	13	8	4
More than $100,000	79	11	6	1

Source: Authors' estimates from the HRS.

Notes: Estimates were based on a sample of 433 adults ages 70 to 75 in 1993 who did not report any ADL or IADL limitations at that time and subsequently received at least 90 days of nursing home care. The analysis followed respondents through 2014, classifying individuals as having serious LTSS needs if they received paid or unpaid LTSS and had two or more ADL limitations or severe cognitive impairment. Only LTSS received by adults with serious LTSS needs and only those nursing home stays that lasted at least 90 days were considered in the analysis. Probabilities were derived from duration models of nursing home care. Financial resources were measured at the baseline 1993 interview and expressed in inflation-adjusted 2017 dollars.

Table 11. *Total Household Net Worth at Baseline by Subsequent LTSS Needs and Use, Adults Ages 53 to 61 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
Serious LTSS needs							
None	24,300	113,800	271,300	575,600	1,169,000	540,800	3.8
Some, no more than 2 years	3,500	57,000	179,800	411,000	866,800	398,400	6.6
2 to 4 years	2,600	46,000	170,600	394,800	919,700	343,300	7.9
More than 4 years	0	27,800	130,300	321,300	740,000	331,400	11.9
Paid LTSS							
None	19,100	102,000	255,400	543,400	1,132,500	513,300	4.1
Some, no more than 2 years	900	38,600	170,200	413,400	862,100	374,500	9.0
More than 2 years	0	22,400	130,300	427,300	1,021,400	403,300	13.8
Nursing home care							
None	16,200	96,400	246,800	539,300	1,113,400	505,900	4.6
Some, no more than 2 years	2,600	51,200	170,200	390,700	1,021,400	353,500	8.6
More than 2 years	0	31,400	144,200	415,100	844,400	386,300	10.7
Medicaid-financed nursing home care							
None	15,600	94,800	245,800	538,600	1,116,400	504,400	4.7
Some	2,600	43,400	168,500	390,700	863,300	366,800	7.8

Source: Authors' estimates from the HRS.
Notes: The analysis followed a sample of 6,052 adults ages 53 to 61 in 1992 until 2014, when surviving sample members were ages 75 to 83. The sample excluded adults who reported any ADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted. Amounts were reported in inflation-adjusted 2017 dollars.

Table 12. *Alternative Measures of Household Wealth at Baseline by Duration of Subsequent Serious LTSS Needs, Adults Ages 53 to 61 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
Financial wealth							
None	0	8,700	66,000	204,600	481,100	189,300	13.9
Some, no more than 2 years	-1,200	500	28,700	126,800	355,200	141,200	22.0
2 to 4 years	-700	200	31,100	114,300	299,300	116,500	23.6
More than 4 years	-3,100	0	11,600	86,900	333,900	98,600	32.1
Housing wealth							
None	0	43,400	104,200	186,700	312,700	140,600	15.2
Some, no more than 2 years	0	15,600	83,400	156,300	277,900	106,200	21.5
2 to 4 years	0	8,700	69,500	144,200	236,200	98,500	23.3
More than 4 years	0	0	62,500	132,000	243,200	95,300	30.2
Nonhousing wealth							
None	5,600	33,700	137,200	383,900	917,100	400,100	5.4
Some, no more than 2 years	200	17,400	74,700	243,200	684,700	292,200	9.9
2 to 4 years	0	13,000	76,100	238,000	643,600	244,800	10.7
More than 4 years	0	4,300	41,700	184,100	529,800	236,200	17.3

Source: Authors' estimates from the HRS.

Notes: The analysis followed a sample of 6,052 adults ages 53 to 61 in 1992 until 2014, when surviving sample members were ages 75 to 83. The sample excluded adults who reported any ADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted. Amounts were reported in inflation-adjusted 2017 dollars.

Table 13. *Total Household Net Worth at Baseline by Subsequent LTSS Needs and Use, Adults Ages 70 to 75 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
Serious LTSS needs							
None	26,200	110,800	265,200	521,000	982,100	444,200	3.5
Some, no more than 2 years	12,200	91,200	228,000	489,800	966,100	410,500	3.9
2 to 4 years	8,400	68,400	180,200	444,200	928,900	355,800	4.0
More than 4 years	5,900	68,400	160,400	345,000	699,200	340,200	5.7
Paid LTSS							
None	20,200	95,400	241,500	494,400	948,300	420,200	3.6
Some, no more than 2 years	10,100	82,800	206,000	497,400	900,200	391,100	4.0
More than 2 years	6,600	78,500	194,200	381,700	919,200	370,900	5.8
Nursing home care							
None	15,400	92,900	240,700	517,700	996,500	429,700	4.2
Some, no more than 2 years	11,300	82,800	200,100	400,100	633,300	321,700	2.0
More than 2 years	8,400	71,100	168,000	345,000	719,400	317,600	6.5
Medicaid-financed nursing home care							
None	15,200	89,500	233,100	509,600	980,800	423,100	4.2
Some	16,900	84,400	194,200	366,500	635,900	316,100	3.2

Source: Authors' estimates from the HRS.
Notes: The analysis followed a sample of 2,676 adults ages 70 to 75 in 1993 until 2014, when surviving sample members were ages 91 to 96. The sample excluded adults who reported any ADL or IADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted.

Table 14. *Alternative Measures of Household Wealth at Baseline by Duration of Subsequent Serious LTSS Needs, Adults Ages 70 to 75 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
Financial Wealth							
None	0	5,200	50,700	179,000	434,100	151,400	15.0
Some, no more than 2 years	0	6,100	49,000	186,600	443,000	154,900	14.7
2 to 4 years	0	1,000	25,300	89,500	288,800	117,300	19.7
More than 4 years	0	500	16,900	89,200	278,800	114,500	22.1
Housing wealth							
None	0	54,000	118,200	211,100	337,800	166,700	14.9
Some, no more than 2 years	0	42,200	113,200	185,800	324,300	148,700	17.9
2 to 4 years	0	33,800	101,300	202,700	337,800	142,300	18.9
More than 4 years	0	35,500	104,700	168,900	270,200	135,900	19.4
Nonhousing wealth							
None	2,100	20,300	111,500	329,300	678,900	277,500	6.7
Some, no more than 2 years	1,700	17,600	86,500	293,900	700,900	261,700	6.6
2 to 4 years	0	9,500	61,300	219,600	564,900	213,500	9.9
More than 4 years	200	6,200	38,800	162,100	488,100	204,300	9.2

Source: Authors' estimates from the HRS.
Notes: The analysis followed a sample of 2,676 adults ages 70 to 75 in 1993 until 2014, when surviving sample members were ages 91 to 96. The sample excluded adults who reported any ADL or IADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted.

Table 15. *Total Household Net Worth and Household Financial Wealth at Baseline by Subsequent LTSS Needs and Use through Age 85, Adults Ages 70 to 75 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
			Total Net Worth				
Serious LTSS needs							
None	435,200	20,300	105,600	253,300	510,900	1,009,100	3.8
Some, no more than 2 years	359,700	9,000	74,300	179,400	440,800	819,100	3.4
More than 2 years	321,300	2,500	57,100	153,700	367,300	623,200	6.8
Paid LTSS							
None	419,900	18,600	96,300	240,700	491,000	962,700	3.7
Some	335,400	3,400	67,200	160,400	417,200	749,700	5.9
Nursing home care							
None	417,300	15,400	92,000	233,100	494,400	962,700	4.0
Some	280,000	4,100	68,700	157,200	389,000	623,200	4.9
Medicaid-financed nursing home care							
None	411,500	15,200	89,500	230,500	491,000	937,300	4.0
Some	121,700	1,000	25,300	119,900	171,400	217,700	7.5
			Financial Wealth				
Serious LTSS needs							
None	149,700	0	5,700	50,700	177,300	427,500	14.9
Some, no more than 2 years	136,600	0	2,500	33,800	147,000	373,300	17.4
More than 2 years	110,200	0	100	11,800	82,100	236,400	24.5
Paid LTSS							
None	145,500	0	4,200	45,600	167,200	410,400	15.8
Some	125,900	0	800	20,300	101,300	336,100	20.6
Nursing home care							
None	145,900	0	3,900	43,900	164,700	407,000	16.0
Some	101,800	0	300	16,900	84,400	270,200	23.2
Medicaid-financed nursing home care							
None	144,600	0	3,400	42,200	164,200	407,000	16.4
Some	24,700	0	0	2,500	36,300	79,200	30.2

Source: Authors' estimates from the HRS.
Notes: The analysis followed a sample of 2,676 adults ages 70 to 75 in 1993 until they turned age 85. The sample excluded adults who reported any ADL or IADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted.

Table 16. *Housing and Nonhousing Household Wealth at Baseline by Subsequent LTSS Needs and Use through Age 85, Adults Ages 70 to 75 at Baseline*

	Percentiles of the Wealth Distribution ($)						
	10th	*25th*	*50th (median)*	*75th*	*90th*	*Mean ($)*	*No wealth (%)*
			Housing Wealth				
Serious LTSS needs							
None	160,000	0	50,700	118,200	211,100	337,800	15.7
Some, no more than 2 years	144,100	0	25,300	101,300	185,800	304,000	20.7
More than 2 years	129,800	0	37,000	101,300	165,500	295,600	18.6
Paid LTSS							
None	156,300	0	50,700	118,200	202,700	326,000	15.9
Some	136,700	0	16,900	103,000	168,900	320,900	22.7
Nursing home care							
None	155,200	0	47,300	118,200	202,700	326,000	16.7
Some	129,500	0	28,700	102,200	165,500	295,600	21.4
Medicaid-financed nursing home care							
None	154,400	0	47,300	116,500	202,700	326,000	16.8
Some	85,400	0	0	84,400	118,200	158,800	28.1
			Nonhousing Wealth				
Serious LTSS needs							
None	275,200	1,700	19,800	101,300	324,300	678,900	6.9
Some, no more than 2 years	215,600	1,200	10,900	58,300	239,300	606,300	6.4
More than 2 years	191,400	0	4,200	33,300	147,800	488,100	12.0
Paid LTSS							
None	263,600	1,400	17,600	88,700	298,900	658,700	7.1
Some	198,600	200	6,800	43,900	200,100	536,600	9.5
Nursing home care							
None	262,100	1,200	16,900	86,100	297,600	662,100	7.3
Some	150,500	700	5,900	32,900	170,600	474,600	8.8
Medicaid-financed nursing home care							
None	257,100	1,200	16,000	84,400	287,100	638,600	7.4
Some	36,300	0	3,400	11,800	50,800	107,600	12.4

Source: Authors' estimates from the HRS.
Notes: The analysis followed a sample of 2,676 adults ages 70 to 75 in 1993 until they turned age 85. The sample excluded adults who reported any ADL or IADL limitations at baseline. The analysis classified adults as having serious LTSS needs if they had severe cognitive impairment or limitations with two or more ADLs and they received paid or unpaid LTSS. LTSS received by adults who did not have serious LTSS needs was not counted.

Table 17. *Specifications for Illustrative Caregiver Tax Credit Proposals*

	CTC1	CTC2	CTC3	CTC4	CTC5	CTC6
	Most expansive	Intermediate permutations				Least expansive
	Refundable, no high-income phase-out, first dollar, oop and wages, no work requirement unless claiming wages	Refundable, no high-income phase-out, deductible, oop and wages, no work requirement unless claiming wages	Refundable, high-income phase-out, deductible, oop and wages, no work requirement unless claiming wages	Non-refundable, high-income phase-out, deductible, oop and wages, no work requirement	Non-refundable, high-income phase-out, deductible, oop only, no work requirement	Non-refundable, high-income phase-out, deductible, oop only, work requirement
Maximum Credit	$2,500 (indexed to the Consumer Price Index starting in 2018)					
Refundable?	Yes	Yes	Yes	No	No	No
Credit percent	25% of caregiver's allowable expenses					
Are lost wages allowable?	Yes	Yes	Yes	Yes	No	No
First Dollar Applicability?	Yes ($0 deductible)	No; caregiver must have accrued a deductible of at least $1,000 in expenses (indexed to CPI)				
Earnings Requirement	None	None	None	None	None	Yes, $5,000 [indexed]
Caregiver Base Amount for Maximum Credit [a]	$10,000	$10,000	$11,000	$11,000	$11,000	$11,000
Stacking?	Processed last	Processed last	Processed last	Processed before refundable credits	Processed before refundable credits	Processed before refundable credits
Income Phase-Out Range	None	None	Couples: $120,000 to $180,000 modified AGI, thresholds are price indexed, linear phase-out Singles: $75,000 to $105,000 modified AGI, thresholds are price indexed, linear phase-out			
Care Recipient Impairment Standard	2+ ADL limitations for 90+ days during year, or requires substantial supervision to be protected from threats to health and safety due to severe cognitive impairment; different criteria apply for children, for example a child under age 2 must require durable equipment or a skilled practitioner if parents/guardians are absent					
Examples of Qualifying OOP Expenses	(1) Respite care; (2) care-related counseling/support groups/training; (3) verified lost wages; (4) travel costs; (5) assistive technologies; (6) human assistance; (7) medication management; (8) non-health items (such as incontinence supplies). Expenses must be documented.					

Notes: Each credit shares the following features: they would begin in 2018; qualifying expenses adhere to the spirit in IRS guidelines for LTSS expenses under the medical expense deduction (see Favreault and Spillman (2017) for additional detail); eligibility depends on the income of the caregiver making OOP payments, not the care recipient's income. OOP=out-of-pocket caregiver expenses.

[a] Base includes out-of-pocket spending and lost wages where deductible

Table 18. *Specifications for Illustrative Respite Care Proposals*

	RC1	RC2	RC3	RC4	RC5	RC6
	Most expansive	Intermediate permutations				Least expansive
	Any caregiver, HIPAA disability, 15 nights per year	Any caregiver, HIPAA disability, 10 nights per year	Any caregiver, Medicare-enrolled, HIPAA disability, 10 nights per year	Non-spouse caregivers, Medicare-enrolled, HIPAA disability, 10 nights per year	Working non-spouse caregivers, Medicare-enrolled, HIPAA disability, 10 nights per year	Working non-spouse caregivers, Medicare-enrolled, more strict disability, 10 nights per year
Maximum nights/hours	15 (360)	10 (240)	10 (240)	10 (240)	10 (240)	10 (240)
Medicare enrollment requirement?	No	No	Yes	Yes	Yes	Yes
Caregiver work/ earnings requirement?	No	No	No	No	Yes	Yes
Impairment of Care Recipient Standard	2+ ADL limitations for 90+ days during year, or requires substantial supervision to be protected from threats to health and safety due to severe cognitive impairment					3 or more ADLs or severe cognitive impairment
Relationship to Care Recipient	Most	Most	Most	No spouses	No spouses	No spouses

Notes: Each proposed respite care program would start in 2018 and limit eligibility to care recipients ages 65 and older. None would limit eligibility based on a caregiver's or care recipient's income.

Table 19. *Specifications for Illustrative Social Insurance Proposals*

	SI1	SI2	SI3	SI4	SI5	SI6
	Most expansive	Intermediate permutations				Least expansive
Mandatory or voluntary	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Voluntary
Daily benefit level	$90/day	$90/day	$90/day	$70 if at the bottom of the disability qualification scale; $90 if in middle; $100 if most disabled	$90/day	$90/day
Elimination period	90 days	90 days	90 days	90 days	90 days	90 days
Lifetime maximum [a]	2 years	2 years	2 years	2 years [b]	2 years	2 years
Premium/tax start age	21	40	21	21	21	Beneficiary choice (premiums higher later)
Contribution years to vest	10	12	10	10	10	5-year vest; premiums current
Deductible type (time, service, cash OOP)	Time disabled	Time disabled	Time disabled	Time disabled	Service	Time disabled
Impairment Standard	2+ ADL limitations for 90+ days during year, or requires substantial supervision to be protected from threats to health and safety due to severe cognitive impairment		3 or more ADLs or severe cognitive impairment	2+ ADL limitations for 90+ days during year, or requires substantial supervision to be protected from threats to health and safety due to severe cognitive impairment		
Benefit Indexing	3.25%					

Notes**:** Common features across proposals: All start collecting contributions in 2018; pays benefits after vesting, but no earlier than age 65; benefit duration of two years; not unauthorized migrant; Medicaid pays during deducible period if meeting other requirements; program pays before Medicaid after vest and met elimination period; other public (VA, OAA) as under current law; benefit is cash; no underwriting; no spousal entitlement; no copayments.

[a] The lifetime maximum is based on dollars spent rather than on days of service. Those electing to spend less than the full amount each day can spread the benefit out for a longer period.

[b] We assume that if a person switches disability levels from one year to the next, the maximum dollar value resets to the new amount. Accrued dollars spent to date are carried over**.**

Table 20. *Projection Results: Distribution of New Benefits from Caregiver Tax Credits, Respite Care Benefits, and Social Insurance Benefits in the Cross-Section by Income and Wealth under Intermediate Assumptions*

	Caregiver tax credits						Respite care benefits						Social insurance benefits					
	Refundable versions			Non-refundable versions			Allows spouse caregivers			Only nonspouse caregivers			Mandatory					Voluntary
	CTC1	CTC2	CTC3	CTC4	CTC5	CTC6	RC1	RC2	RC3	RC4	RC5	RC6	SI1	SI2	SI3	SI4	SI5	SI6
Percent of benefits to this income/poverty quintile																		
Lowest	12.3	11.4	13.9	1.7	0.8	0.9	26.4	23.1	23.1	30.8	30.6	30.6	21.4	20.3	22.2	21.7	22.5	6.1
Second	14.2	13.6	16.5	9.5	6.1	7.1	31.2	33.3	33.3	33.0	33.1	33.1	24.3	24.2	25.2	24.7	24.7	16.0
Middle	18.6	18.4	22.2	23.3	21.9	25.2	20.2	20.8	20.8	17.4	17.4	17.4	19.8	20.2	19.4	19.7	19.4	24.6
Fourth	23.1	23.6	27.5	38.2	40.6	42.3	15.7	16.3	16.3	14.6	14.5	14.5	20.1	20.4	19.8	19.9	19.9	23.4
Highest	31.8	33.1	20.0	27.4	30.5	24.5	6.6	6.5	6.5	4.2	4.2	4.2	14.4	14.9	13.5	14.0	13.5	29.8
Percent of benefits to this per capita income quintile																		
Lowest	13.8	12.5	15.2	1.9	1.0	1.2	37.5	33.6	33.6	39.3	39.3	39.3	26.1	24.6	27.2	26.6	27.3	7.0
Second	15.6	15.0	18.1	11.8	8.5	10.0	27.2	29.3	29.3	28.3	28.4	28.4	33.6	33.9	34.4	33.9	34.0	28.9
Middle	19.4	19.3	23.3	27.4	26.3	30.8	16.0	17.1	17.1	15.1	15.0	15.0	19.3	19.8	18.6	19.0	18.7	24.0
Fourth	23.9	24.6	28.5	40.6	44.4	46.4	10.9	11.4	11.4	9.9	9.8	9.8	12.6	13.0	11.9	12.3	12.2	22.6
Highest	27.3	28.4	14.8	18.2	19.6	11.8	8.3	8.7	8.7	7.4	7.4	7.4	8.4	8.8	7.9	8.2	7.9	17.6
Percent of benefits to this wealth quintile																		
Lowest	19.0	18.6	19.9	17.9	17.7	18.0	42.5	39.9	39.9	46.7	46.8	46.8	25.3	24.5	27.7	26.2	27.9	10.1
Second	15.4	15.1	16.7	14.1	14.0	14.5	21.6	22.5	22.5	20.9	20.8	20.8	21.3	21.1	21.3	21.4	21.1	13.6
Middle	18.0	17.8	18.9	18.4	18.4	18.5	14.8	15.5	15.5	13.5	13.4	13.4	20.7	20.8	20.3	20.5	20.2	21.4
Fourth	21.2	21.3	21.2	23.4	23.6	23.6	12.5	13.2	13.2	11.4	11.5	11.5	18.0	18.4	17.2	17.8	17.1	26.0
Highest	26.6	27.2	23.4	26.1	26.4	25.4	8.5	9.1	9.1	7.5	7.5	7.5	14.7	15.2	13.4	14.2	13.7	28.9

Source: Authors' estimates from DYNASIM4 (runid946) based on information from HRS, NHATS, and other sources. Caregiver tax credit estimates also rely on data from Rainville, Skufca, and Mehegan (2016), including unpublished tabulations from the authors.

Notes: Caregiver tax credits and respite care benefits are examined in the near term (pooled person years over the first decade years after the assumed year of enactment, 2018). Social insurance benefits are examined in the longer term (pooled person years from 2061-2070 because of the long phase in associated with fully or partially pre-funding the benefit and vesting). Quintile breaks are defined based on the population at risk as the policies is implemented: the population ages 25 and older for the tax credits and the population age 65 and older for the respite care benefit and social insurance benefits. See tables 17 through 19 for more detailed descriptions of the proposals.

Table 21. *Projection Results: Distributions of the Present Value of Gross Benefits from Age 65 Until Death with Six Different Social Insurance Benefits by Income and Lifetime Family Earnings Quintiles under Intermediate Assumptions, 1976 to 1980 Birth Cohorts*

	Social insurance benefits					
	Mandatory					Voluntary
	SI1	SI2	SI3	SI4	SI5	SI6
	Percent of benefits to this lifetime family earnings quintile					
Lowest	10.3	9.8	10.5	10.4	10.5	0.9
Second	18.4	18.2	18.1	18.2	18.4	7.0
Middle	20.7	20.8	20.7	20.7	20.7	11.8
Fourth	23.7	24.0	23.6	23.7	23.4	36.1
Highest	27.0	27.3	27.1	27.0	27.1	44.1
	Percent of benefits to people with age 65 income in this quintile					
Lowest	11.7	11.2	11.8	11.7	11.9	0.8
Second	13.4	13.3	13.6	13.5	13.4	8.7
Middle	19.3	19.3	19.3	19.4	19.3	15.9
Fourth	24.1	24.4	24.2	24.2	24.1	28.1
Highest	31.5	31.8	31.2	31.2	31.3	46.5

Source: Authors' estimates from DYNASIM4 (runid946)

Notes: We use a discount rate of 2.9 percent in the calculations. See table 5 for more detailed descriptions of the proposals.

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