

# **New Models for Managing Longevity Risk**

**Public-Private Partnerships**

Edited by

Olivia S. Mitchell

**OXFORD**  
UNIVERSITY PRESS

# OXFORD

UNIVERSITY PRESS

Great Clarendon Street, Oxford, OX2 6DP,  
United Kingdom

Oxford University Press is a department of the University of Oxford.  
It furthers the University's objective of excellence in research, scholarship,  
and education by publishing worldwide. Oxford is a registered trade mark of  
Oxford University Press in the UK and in certain other countries

© Pension Research Council, The Wharton School, The University of Pennsylvania 2022

The moral rights of the authors have been asserted

Impression: 1

Some rights reserved. No part of this publication may be reproduced, stored in  
a retrieval system, or transmitted, in any form or by any means, for commercial purposes,  
without the prior permission in writing of Oxford University Press, or as expressly  
permitted by law, by licence or under terms agreed with the appropriate  
reprographics rights organization.



This is an open access publication, available online and distributed under the terms of a  
Creative Commons Attribution – Non Commercial – No Derivatives 4.0  
International licence (CC BY-NC-ND 4.0), a copy of which is available at  
<http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Enquiries concerning reproduction outside the scope of this licence  
should be sent to the Rights Department, Oxford University Press, at the address above

Published in the United States of America by Oxford University Press  
198 Madison Avenue, New York, NY 10016, United States of America

British Library Cataloguing in Publication Data  
Data available

Library of Congress Control Number: 2021944221

ISBN 978–0–19–285980–8

DOI: 10.1093/oso/9780192859808.001.0001

Printed and bound in Great Britain by Clays Ltd, Elcograf S.p.A.

Links to third party websites are provided by Oxford in good faith and  
for information only. Oxford disclaims any responsibility for the materials  
contained in any third party website referenced in this work.

# Contents

---

<i>List of Figures</i>	ix
<i>List of Tables</i>	xii
<i>Notes on Contributors</i>	xiv

1. Introduction: New Models for Managing Longevity Risk: Public-Private Partnerships <i>Olivia S. Mitchell</i>	1
--	---

## **Part I. Understanding Longevity Risk**

2. Perceptions of Mortality: Individual Assessment of Longevity Risk <i>Kathleen McGarry</i>	11
3. Disability-free Life Trends at Older Ages: Implications for Longevity Risk Management <i>Douglas A. Wolf</i>	34
4. Does Working Longer Enhance Old Age? <i>Maria D. Fitzpatrick</i>	57
5. Working Longer Solves ( <i>Almost</i> ) Everything: The Correlation Between Employment, Social Engagement, and Longevity <i>Tim Driver and Amanda Henshon</i>	70

## **Part II. Public-Private Partnerships to Help Fill the Gaps**

6. Aging in Place: The Role of Public-Private Partnerships <i>Nancy A. Hodgson</i>	91
7. Public-Private Partnerships Extend Community-based Organization's Longevity <i>Dozene Guishard and William J. Dionne</i>	105

**viii Contents**

8. Innovative Strategies to Finance and Deliver Long-term Care <i>Nora Super, Arielle Burstein, Jason Davis, and Caroline Servat</i>	122
9. Building on Hope or Tackling Fear? Policy Responses to the Growing Costs of Alzheimer’s Disease and Other Dementias <i>Adelina Comas-Herrera</i>	150
<b>Part III. Implications for the Financial Sector and Policymakers</b>	
10. State-sponsored Pensions for Private-Sector Workers: The Case for Pooled Annuities and Tontines <i>Richard K. Fullmer and Jonathan Barry Forman</i>	171
11. New Financial Instruments for Managing Longevity Risk <i>John Kiff</i>	207
12. Property Tax Deferral: Can a Public-Private Partnership Help Provide Lifetime Income? <i>Alicia H. Munnell, Wenliang Hou, and Abigail N. Walters</i>	231
13. The Market for Reverse Mortgages among Older Americans <i>Christopher Mayer and Stephanie Moulton</i>	258
<i>The Pension Research Council</i>	301
<i>Index</i>	305

## Chapter 8

# Innovative Strategies to Finance and Deliver Long-term Care

---

*Nora Super, Arielle Burstein, Jason Davis, and Caroline Servat*

Americans reaching age 65 today can expect to live, on average, until age 85—and about one-quarter of them will live past 90 (CDC 2019). While some will enjoy decades of active, purposeful living, over half will need a high degree of assistance with eating, bathing, and other activities of daily living (ADLs). The aging of the Baby Boomers will double the number of Americans needing long-term care (LTC) to 27 million by 2050; see Figure 8.1 (Favreault and Dey 2015). To identify new care delivery and funding models, we at the Milken Institute’s Center for the Future of Aging and Innovative Finance have analyzed the most pressing barriers to effectively meeting the LTC needs of Americans. Based on this research, we have identified actionable suggestions on how to improve the financing and delivery of LTC in the United States.

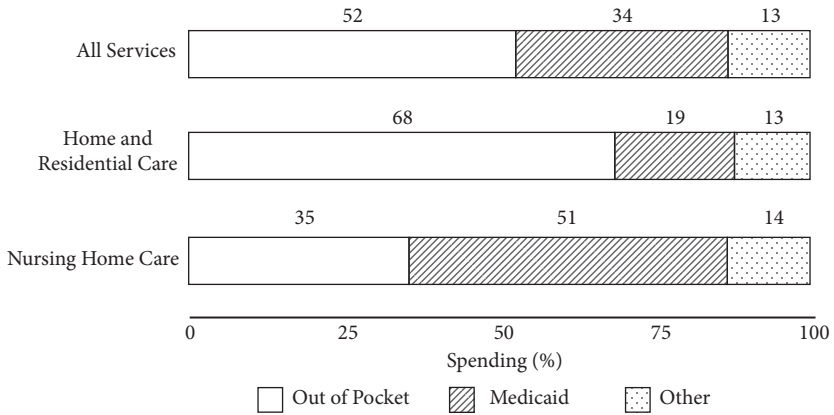
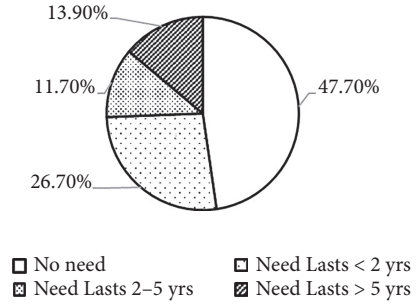
The costs of formal LTC services are staggering. In 2019, the price of a nursing home stay averaged about \$102,200 per year, or well-over two times an older (age 65+) middle-income family’s income. The median rate for a private, one-bedroom unit in an assisted living facility was \$49,000 per year, while the cost of adult day services averaged \$19,500 annually (Genworth 2019). Today, defined benefit pension plans are not available to most Americans, and very few have saved sufficiently for retirement. A typical American age 65–74 has financial assets of just \$95,000, and only \$81,000 in home equity (Jacobson et al. 2017).

Long-term services and support (LTSS) refer to a wide range of services that help people live more independently by assisting with health care needs and ADLs. In the US, Medicaid pays for around 34 percent of LTSS costs, primarily for low-income people or those who have spent down their financial assets to qualify for coverage. Private LTC insurance (LTCI) pays for less than three percent (Favreault and Dey 2015). According to the United States Department of Health and Human Services (HHS), on average roughly 52 percent of LTSS costs are paid out of pocket for individuals age 65 through death; see Figure 8.2).

**Figure 8.1** Length of high need for adults age 65+

Note: 52 percent of adults age 65+ have high need.

Source: Original data: Favreault and Dey (2015).



**Figure 8.2** Average lifetime long-term care spending for adults age 65+ by source  
Source: Favreault and Dey (2015).

By the year 2030, one in five US residents will be age 65+ (US Census Bureau 2018), and 70 percent of them will require LTSS at some point in their lives (BPC 2017). A decline in the number of family caregivers and limited financial resources will make adequate care harder to find for many Americans. In other words, as a nation, we are woefully underprepared for this impending crisis.

With the onset of the coronavirus (COVID-19) outbreak, the market failures and funding gaps in providing LTC stand out in stark relief. Public and private providers and payers face a uniquely daunting challenge in delivering LTC for those at high risk of severe illness and mortality. This new paradigm has impacted everything from the provision of care for socially isolated older adults, to the delivery of technology solutions as telehealth benefits expand in the wake of the crisis. In the long term, the associated economic downturn will further strain families’ and individuals’ ability to save for supportive housing and care.

### Methodology

In 2019, the Milken Institute conducted market research related to LTC funding and delivery models including over 50 interviews with key stakeholders and subject-matter experts from a wide variety of fields including academia, financial services, government, insurance, health care, and technology. Despite initial claims that the system is fundamentally broken and needs to be entirely reworked, over 80 percent of interviewees offered concrete suggestions for incremental solutions to address the gaps in funding and delivery systems.

During this research, we developed several suggestions to improve the current state of LTC funding and delivery. In what follows, we focus on three of the most promising approaches:

- (1) Facilitate private and public insurance product design with increased funding to allow for better testing of models that expand the market for insurers and decrease costs for consumers and government.
- (2) Increase Medicare coverage of LTSS through the expansion of Medicare Advantage (MA) supplemental benefits, refinement and development of the Value-Based Insurance Design (VBID) model, and testing of new benefit offerings that will allow insurers to gather the data needed to measure health outcomes and related cost savings.
- (3) Improve cost savings and efficiency through better integration of technology with care delivery, and by scaling successful funding models to allow for greater adoption.

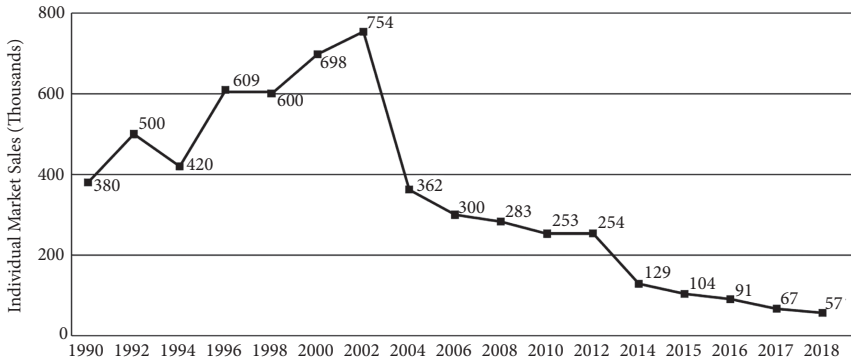
Below we expand upon each in turn.

### Public and Private Long-Term Care Insurance Solutions

Over the last two decades, the private LTCI market has changed considerably, contracting from over 100 insurers offering LTCI coverage in 2004 to roughly a dozen in 2018 ([NAIC 2020](#)).

#### Current state of the LTCI market

Market shrinkage has resulted from faulty actuarial assumptions made before the mid-2000s in pricing LTCI policies as well as a failure to accurately predict interest rates, mortality rates, lapse rates, and claims rates. In the early 2000s, stand-alone individual policy sales reached over 750,000 policies per year, but as of 2018, that number had dwindled to about 57,000 ([Cohen 2019](#); see [Figure 8.3](#)). Those insurers who remained in the market



**Figure 8.3** Annual sales of stand-alone individual policies have been declining for almost 20 years

*Note:* Authors’ analysis based on AHIP, LIMRA and LifePlans sales surveys, 1990–2016. LIMRA data after 2016. Beginning in 2009, LTC Partners data for annuitants included in counts.

*Source:* Cohen (2019).

needed to increase premiums significantly to stay financially solvent and generate financial return, causing trepidation among consumers.

Accordingly, the popularity of traditional stand-alone LTCI products has waned due to the high cost of policies, concern about premium increases, the misperception that Medicare or health insurance benefits include coverage for LTC, and a general lack of product understanding by the consumer (Ujvari 2018). Yet there is room for significant growth in the LTCI market, given that private insurance only covers less than three percent of overall LTSS expenditures (Favreault and Dey 2015).

More recently, the coronavirus outbreak has resulted in a number of shifts within the LTCI market. Some LTCI providers have made qualifying for coverage more difficult by limiting eligibility to those over a certain age, as well as requiring a waiting period for individuals who have tested positive for COVID-19. Additionally, the cost of LTCI may be affected by the pandemic’s negative impact on the economy and the resulting low interest rates. Insurers contending with lower interest earnings may look to make up for those losses through higher pricing (Lankford 2020).

**Promising new approaches**

In response to a declining market for traditional LTCI products, insurers have been experimenting with hybrid policies that integrate existing benefits into life insurance (whole or universal) or annuity products, often through an LTC rider. This enhancement allows the policyholder to access a portion, or the entirety, of a death benefit to pay for qualified LTC expenses.



## 126 New Models for Managing Longevity Risk

Hybrid policies may protect against sharp premium increases because many require an upfront lump premium payment or have structured yearly premiums over a defined time period. Also, underwriting that is less stringent than for traditional LTC products makes qualifying for these policies easier for individuals with pre-existing conditions. In 2018, 85 percent of LTC product sales were for hybrid LTC products, including products with a chronic illness rider ([Society of Actuaries 2019](#)). Hybrid policies do cost more than stand-alone LTCI, typically by three to 15 percent annually ([ElderLawAnswers 2018](#)).

Insurers have also experimented with variations on traditional stand-alone LTCI that borrow features from other segments of the industry. For example, in 2018 [New York Life \(2018\)](#) launched its My Care product. In its basic form, without riders or customizations, My Care offers four levels of benefits between the \$50,000 Bronze level and the \$250,000 Platinum level. Benefits are defined by specific dollar thresholds instead of by the benefit period of three to five years typical in other stand-alone LTCI policies. This product contains features similar to health insurance that keep down the cost of premiums, such as a one-time cash deductible payment and cost-sharing by the policyholder of 20 percent (coinsurance). Market testing these types of products offers insight into the right balance of benefits versus premiums to attract a larger group of enrollees.

Several of our interviewees recommended using health savings accounts (HSAs) as an option to pay for LTCI premiums. HSAs act as tax-advantaged investment vehicles, available to individuals and families enrolled in high-deductible health insurance plans increasingly provided by employers. HSAs are designed to help cover consumers' share of deductible and coinsurance payments; they can also be used to pay for direct LTC costs or premiums for qualified LTCI policies. The tax benefits associated with HSAs are substantial.

Unfortunately, the premium structure of some hybrid policies makes them inappropriate for qualified HSA distributions. Moreover, the potential for HSAs to become a significant future source of LTC funding is limited by current contribution limits. Today, most account holders think of their HSA balance as money to be spent on current expenses, partly because familiarity with 'use it or lose it' flexible spending arrangements (FSAs) means they do not realize that they are not required to spend down their HSA balances every year. Others lack access to longer term investment options within their HSA. The result is that, to date, only a tiny percentage of HSAs are currently invested in covering future health care and LTC needs. Increases in permitted HSA contributions would allow individuals to set aside more money earlier in their lives to help pay those costs in the future.

Losses experienced across the LTCI industry have also deterred potential market entrants. General Electric recognized a \$9.5 billion pre-tax charge in 2018, stemming mostly from improperly priced LTCI policies sold in

the 1980s and 1990s (Scism 2018). In addition to more accurate pricing for new products, insurers could potentially look to the catastrophe (CAT) bond market as a model for guarding against extreme losses. This insurance market developed CAT bonds to shift risk from insurance companies to investors, and to provide insurers with capital if and when a natural disaster occurs that meets clearly defined thresholds. Given the high costs of LTC and the inherent risk for insurers active in the LTCI market, creating a capital market product similar to CAT bonds could help provide capital should claims reach catastrophic levels. Providing additional forms of liquidity to insurance companies could, in turn, make the market more profitable and allow for increased flexibility in policy construction. More research is needed to model and understand general underwriting issues around triggers that are not incident-specific, such as a natural disaster, and based on a pool of policyholders (Milken Institute 2008).

### **LTCI state program experimentation**

The Affordable Care Act (ACA) of 2010 established the federal Community Living Assistance Services and Supports (CLASS) plan, a voluntary, publicly administered federal LTCI program; this Act was subsequently repealed after it was determined to be financially nonviable. Since then, federal policymakers have not addressed LTCI comprehensively, though some states have begun to advance public programs.<sup>1</sup> When designing public LTCI programs, states have taken three distinct approaches: (1) a full coverage approach to provide benefits after a short waiting period, typically 90 days, with no lifetime claims limit; (2) a front-end approach that has a similarly short waiting period but a limited benefit timeframe (e.g. two years); and (3) catastrophic (back-end) coverage that has a longer waiting period (e.g. two years), with no lifetime claims limit (Gleckman 2019).

The full coverage plan provides coverage without any gaps, but it carries the highest cost. Favreault et al. (2015) estimated that a 1.35 percent payroll tax would be needed to fund a mandatory full coverage program. A front-end approach complements Medicare's post-acute care (PAC) coverage,<sup>2</sup> and the costs are more predictable, making it easier for government actuaries to model. Nevertheless, critics have warned that front-end coverage could discourage people from planning for their own needs, does not complement private LTCI, and fails to meaningfully help those with catastrophic needs. Also, this approach is not seen as progressive because wealthy individuals receive the same benefits as do low-income individuals (Gleckman 2019).

Over the years, some insurers and policymakers have emphasized the advantages of government-sponsored catastrophic LTC coverage, because it would significantly reduce the risk of covering the approximately 15

## **128 New Models for Managing Longevity Risk**

percent of older adults with lifetime costs over \$250,000 (BPC 2017). In fact the Bipartisan Policy Center (BPC) concluded that government-sponsored catastrophic insurance would need to be mandatory ‘to spread risk and remain financially feasible’ (BPC 2017: 26). Such a backloaded social insurance approach (when combined with a safety net for those without adequate means) could provide a more easily explained and manageable front-end obligation, for which an individual’s assets or the purchase of LTCI policies could help cover the gaps.

In 2019, Washington State Governor Jay Inslee signed into law the Long-term Care Trust Act, establishing the nation’s first state-level LTCI program based on the front-end coverage model. This program provides a maximum lifetime benefit of \$36,500 per person (\$100 per day), indexed to inflation. Funding comes from mandatory payroll taxes paid by all Washington W-2 workers of 58 cents per every \$100 of income. Eligibility is limited to Washington residents who have paid into the program for a specified period. To access benefits, an individual must need assistance with at least three ADLs. It has been estimated that Medicaid savings will be \$34 million in the first year that benefits are distributed, growing to a total of roughly \$4 billion by 2052 (Katz 2019; [Washingtonians for a Responsible Future 2019](#)). This state program is likely to generate much-needed data about how a front-end approach can help finance LTC. Critics have noted that the benefits of the program are too small to pay for the full costs of care, but they generally view it as a step in the right direction.

The Minnesota ‘LifeStage Protection Product’ proposal was put forward in December 2018 under the Minnesota Department of Human Services ‘Own Your Future’ initiative. It is a flexible insurance product that acts as term-life insurance during the policyholders’ working years, and then it converts to LTCI at age 65 with coverage amounts and premiums remaining constant. The product, designed to be affordable, specifically targets adults between 35 and 55 years of age earning \$50,000 to \$125,000 per year (e.g. a 45-year-old male with a \$100,000-policy would pay \$63 per month; [O’Leary Marketing Associates LLC 2018](#)). Such a product could be attractive to parents who seek to safeguard their children through life insurance during the parents’ working lives and to convert the policy to pay for LTC expenses after their children are grown.

### **Barriers to expansion**

Another reason Americans have been slow to buy LTCI is that insurers have failed to demonstrate the value proposition to consumers. Several of our interviewees noted that the regulatory process for bringing new insurance products to the market can be quite lengthy. Insurers and actuaries also indicated that the review process for obtaining approval of rate increases

is cumbersome. In response, the National Association of Insurance Commissioners (NAIC) asked its LTCI task force to draft a proposal outlining a streamlined and consistent LTCI rate review process. The new process would avoid duplication of work by state insurance departments and the insurers themselves, and also address ‘cross-state rate subsidization’ (Hilton 2020).

### **Path forward**

Our research therefore identifies several strategies that show promise, including the following:

- Create better tax incentives that ensure LTCI (including all forms of hybrid policies) becomes an integral part of the retirement finance conversation, given that LTC costs are the most significant unmet retirement income security threat for most Americans.
- Increase HSA contribution limits and tax-advantaged withdrawal limits to better accommodate LTCI premiums, or create a new savings vehicle specifically for LTC modeled after HSAs.
- Enhance LTCI program experimentation at the state level, exploring back-end ‘catastrophic’ coverage options in addition to variations on the front-end approach.
- Explore similarities with the catastrophic risk insurance market and the CAT bond market to improve predictive modeling and provide a secondary market opportunity.

### **Medicare Expansion Solutions**

While some experts look to new product design and state-based approaches to boost LTCI insurance, others point to the health insurance industry for lessons on how to manage the risk and cost of insurance.

### **Current state of Medicare market**

Ample evidence suggests that social determinants of health, including access to housing, nutrition, and transportation, can positively impact health outcomes and reduce health care use and spending for vulnerable populations (Nichols and Taylor 2018). Social determinants, including health behaviors, social, and economic factors, account for 80 percent of health outcomes in a population, compared with 20 percent attributed to clinical care (Magnan 2017). To address this reality, the health care industry has been moving services out of clinical settings and into the communities where people live (Servat and Super 2019).

## 130 New Models for Managing Longevity Risk

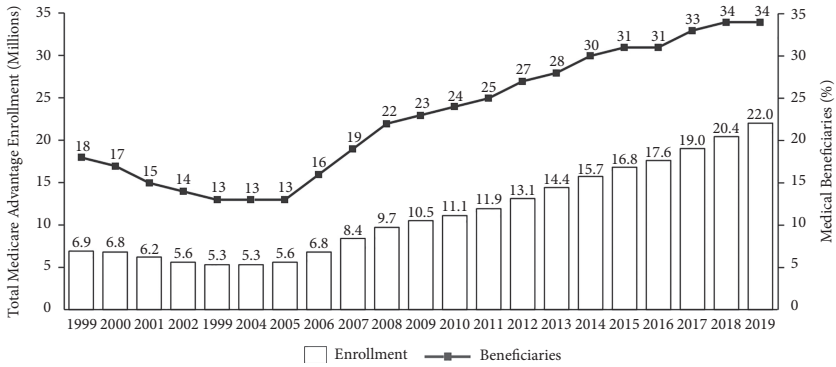
Historically, the US Medicare program has paid only for acute care services such as hospital stays, physician visits, and other services determined to be medically necessary by a physician. In particular, Medicare does not provide LTC coverage for nursing homes or personal care needs such as help with bathing or dressing (HHS 2017). Many Americans mistakenly believe that Medicare pays for these services and are surprised to find out it does not (Insured Retirement Institute 2019).

MA, originally named the Medicare+Choice program, was created under the 1997 Balanced Budget Act in response to growing support for private alternatives to traditional Medicare. Private health plans have been part of the Medicare program since its inception in 1965, first operating under risk-based contracts with health maintenance organizations (HMOs), which grew substantially from the 1980s onward. MA plans are required to submit estimates of the costs of providing traditional Medicare benefits and, if their payment rates exceed those costs, to provide additional benefits to their enrollees equal to the value of the surplus. MA plans traditionally include benefits such as prescription drug benefits, and vision and dental care as a means to attract more enrollees.

The 2004 Medicare Prescription Drug, Improvement, and Modernization of Act (MMA) further changed how private plans (now named MA) are paid under Medicare. Under the current bidding process, MA plans that bid below the county-level spending benchmarks are offered rebates in the amount of the value of the surplus, which then converts to additional benefits to the enrollee. MMA also paved the way for more private plan options within MA including regional preferred provider options (PPOs), Special Needs Plans (SNPs), and a coordinated care plan designed to deliver targeted care to address the needs of specific vulnerable populations. Today, 13 percent of MA enrollees are in SNPs, with 85 percent of those being dually eligible for Medicaid and Medicare (Jacobson et al. 2019). Enrollment in MA has nearly doubled over the past decade. In 2019, the majority of the 64 million people on Medicare were covered by traditional Medicare, but one-third (34%) were enrolled in MA plans (Jacobson et al. 2019). The Congressional Budget Office (CBO) projects that MA enrollment will continue to grow over the next decade, with plans enrolling about 47 percent of beneficiaries by 2029, compared with 34 percent in 2018 (Jacobson et al. 2019; see Figure 8.4).

### Promising new approaches

With growing evidence confirming that provision of supportive services saves costs in the long run, Medicare has begun experimenting with



**Figure 8.4** Enrollment in Medicare Advantage has nearly doubled, 2010–2019

*Note:* Includes cost plans as well as Medicare Advantage plans. About 64 million people were enrolled in Medicare in 2019.

*Source:* Kaiser Family Foundation (2019).

covering non-medical services, such as transportation and home-meal delivery. Accordingly, the line has blurred between supporting social determinants of health and providing LTSS.

**Medicare Advantage special supplemental benefits** Through the 2019 enactment of the Creating High-Quality Results and Outcomes Necessary to Improve Chronic (CHRONIC) Care Act, MA plans for the first time can pay for services that are not primarily health related. These ‘special supplemental benefits’ can be targeted to meet the needs of certain chronically ill enrollees. With Centers for Medicare & Medicaid Services (CMS) guidance, MA plans have been granted significant flexibility around who is eligible for these benefits and the services they receive ([Anne Tumlinson Innovations & Long-Term Quality Alliance 2019](#)). Analysis of publicly available data from CMS indicates that 512 plans (16% of all MA plans) will offer at least one of the new supplemental benefits ([Long-Term Quality Alliance & ATI Advisory 2020](#)).

**Value-based insurance design** In 2017, CMS began testing the MA VBID model, providing insurers with the ability to offer beneficiaries diagnosed with select chronic diseases various incentives (e.g. reduced cost-sharing and additional supplemental benefits) for utilization of services that providers considered to be of high clinical value. The model aims to ‘reduce Medicare program expenditures, enhance the quality of care for Medicare beneficiaries, including dual-eligible beneficiaries, and improve the coordination and efficiency of health care service delivery’ ([CMS 2019](#)). The model was initially made available to seven states covering seven

## 132 New Models for Managing Longevity Risk

chronic diseases; CMS then expanded it to all 50 states and territories ([Murphy-Barron et al. 2019](#)).

The scope of MA's VBID program has also expanded. Initially, the Center for Medicare and Medicaid Innovation (CMMI) allowed participating MA plans to target enrollees with any of only seven chronic conditions: diabetes, chronic obstructive pulmonary disease, congestive heart failure, past stroke, hypertension, coronary artery disease, and mood disorders. In 2018, rheumatoid arthritis and dementia were added to the list. Consequently, the uptake from insurers has been significant. The number of MA members enrolled in plans with value-based payment designs more than tripled from 2019 to 2020. CMS announced expansions to the VBID model, to include further customization of plans based on socioeconomic status, increasing access to telehealth services, and incentives for wellness program participation, including premium reduction and, eventually, a hospice benefit.

Overall, the VBID program offers MA plans a great deal of flexibility to offer person-centered care, which could make available some LTSS to Medicare beneficiaries. The potential benefits of the VBID model to MA plans are many and include ([Murphy-Barron et al. 2019](#)):

- Possible savings due to avoidance of costly medical care
- Improved health outcomes
- Future increases in enrollment due to enhanced benefits or reduced cost-sharing
- Broadened networks due to telehealth services
- Plan flexibility

Given this new regulatory flexibility, major payers have developed specific evaluation frameworks around non-medical benefits to enrollees. For example, [Humana \(2019\)](#) is targeting social determinants with its Bold Goal Initiative, focused on food insecurity, loneliness, and social isolation 'because of their direct impact on healthy days and clinical outcomes,' the company states. These initiatives include a predictive model allowing care managers and clinicians to identify patients at risk of loneliness and isolation. In December 2019, the company announced a new partnership with Philips, a leading technology company, to implement remote monitoring solutions as a fall prevention benefit for at-risk members.

Aetna is partnering with Meals on Wheels America to focus on technology-based care coordination to track the well-being of members in the home environment. Through this partnership, Meals on Wheels created a technology-based platform to allow Meals on Wheels volunteers to track noticeable health changes in free-meal recipients. The current project is operating in four markets, serving 50 clients per market ([Bryant](#)

2019). Meals on Wheels also has a larger scale project in three markets with Humana to address social determinants of health (e.g. food insecurity, loneliness, and medication management). Aetna's MA plan also includes a new fall prevention supplemental benefit for qualifying members in the form of an annual allowance on home safety features (Aetna 2019).

**New benefits in traditional Medicare** Medicare is receiving a great deal of political attention, yet most discussions on the Democratic side have focused on ways to expand coverage to all Americans, rather than on how to increase benefits to address the growing LTC crisis. Both Senators Bernie Sanders (I-VT) and Elizabeth Warren's (D-MA) proposals for 'Medicare for All' suggested expanding Medicare to cover LTSS. These proposals harken back to 2005 when some policymakers proposed the creation of Medicare Part E (or Extra) to help pay for prescription drugs and other out-of-pocket expenses (Cooper et al. 2005). Prescription drug coverage was added to Medicare as Part D under the MMA in 2016. To date, President Joe Biden has crafted a plan modeled after the 2019 Credit for Caring Act, which would allow some of America's 40 million family caregivers to receive a tax credit of up to \$3,000 to help defray LTSS costs; Biden's proposal increases the tax credit to \$5,000.

In 2018, Republican Frank Pallone (D-NJ), chairman of the House Energy and Commerce Committee, offered a draft Part E amendment, the Medicare Long-Term Care Services and Supports Act (House Energy and Commerce Committee, 2018). This proposal would establish a cash benefit within Medicare for beneficiaries to use toward all LTSS, including nursing facility care, adult daycare programs, home health aide services, personal care services, transportation, and assistance provided by a family caregiver. Draft legislation has not yet been introduced in the House since it was proposed two years ago.

**New Medigap options** Medicare Supplement Insurance or Medigap policies are private plans, available from insurance companies or through brokers, but not on the CMS website (Medicare.gov). Medigap plans are designed to fill the gaps in Medicare coverage for costs such as copayments, coinsurance, and deductibles. They differ from MA as the latter provides coverage for all health services. Medigap plans do cover some of the benefits that traditional, fee-for-service Medicare does not, and they are standardized and regulated at the state level. Labeled Plans A, B, C, D, F, G, K, L, M, and N.<sup>2</sup> each have a different coverage set standardized by Medicare. Essential for those with pre-existing conditions, only four states (Connecticut, Massachusetts, Maine, New York) require either continuous or annual guaranteed issue protections for beneficiaries regardless of medical history (Boccuti et al. 2018).



## 134 New Models for Managing Longevity Risk

While Medigap plans have not traditionally covered LTSS, states that are not subject to federal uniformity standards (i.e. Massachusetts, Minnesota, and Wisconsin) may have more flexibility to experiment with adding non-medical benefits to address the needs of those enrolled in traditional Medicare. States with larger shares of enrollees in Medigap plans tend to be located in the Midwest and Plains states where access to MA plans is lower. In 2018, the Minnesota Department of Human Services proposed to provide a home care benefit for Medigap and MA plans. Actuaries calculated that a one-year, \$100-a-day home care benefit would add about \$21 to a monthly Medigap premium ([John Cutler Consulting 2018](#)).

### Barriers to expansion

Opportunities to expand MA supplemental benefits depend on the availability of rebate dollars which vary widely across geographic markets. Rebates, which average \$107 per month in 2019 across the nation, can range from as little as \$2 in North Dakota to \$159 in Florida ([Skopec et al. 2019](#)).

CMS criteria for targeting supplemental non-medical benefits also present implementation challenges. According to the rules, non-medical benefits can be targeted based on *clinical criteria* rather than *social needs*, and coding can vary significantly across providers, making eligibility criteria challenging to navigate. Due to issues related to licensing and payment, MA plans are also concerned with how to provide these new benefits across multiple states ([Long-term Quality Alliance 2018](#)).

Actuaries have had difficulty modeling the real cost of providing discrete supplemental benefits, which has created an atmosphere of uncertainty and may partly account for the relatively slow and conservative rollout of such services. MA plans cautiously rolled out these new benefits in 2020, and experts anticipate that a broader distribution of benefits across markets in the future will enable more reliable economic analyses.

Critics of MA expansion efforts note that the model is not available everywhere in the US, and MA plans restrict access to doctors outside of their plans' network. Moreover, MA plans have not penetrated rural areas and are found mainly in more densely populated markets. Thus, in six states (Florida, Hawaii, Minnesota, Oregon, Pennsylvania, and Wisconsin) and Puerto Rico, over 40 percent of Medicare beneficiaries are enrolled in an MA plan. By contrast, in two more rural states (Alaska and Wyoming), fewer than 10 percent of all beneficiaries are enrolled in MA plans ([Jacobson et al. 2019](#)).

House Ways and Means Committee Chairman Richard Neal (D-MA) has also invited NAIC to explore the financial feasibility of adding LTC to Medigap policies. [NAIC \(2019\)](#) concluded that the addition of LTC benefits could make such coverage cost-prohibitive for most Medicare beneficiaries. The entity also noted other barriers to Medigap coverage of including LTC,

such as anti-selection, plan uniformity across states versus optional riders, and potential market disruption.

While the majority of Medicare beneficiaries are enrolled in traditional (or fee-for-service) Medicare, almost all innovation in recent years has occurred in MA plans and other shared-risk programs. This may be because it is challenging to bundle packages of services under traditional Medicare due to its fee-for-service nature.

To summarize, several promising strategies to use Medicare as a vehicle to provide coverage for some LTSS are as follows:

- Continue to test the expansion of MA special supplemental benefits (e.g. home-meal delivery and transportation services) to measure the economic and health impacts;
- Test and expand the delivery of LTSS under VBID model; and
- Create new Medicare Part E in traditional Medicare to cover LTSS or new Medigap plans to cover LTC costs.

## **Technological Solutions**

With a rapidly aging population and high costs for care, technology offers deep potential to fill a wide gap between the demand for and the availability of services.

### **Current state of technology**

LTSS typically requires high touch interaction, but technology can help meet needs for those who cannot afford to pay for services or who live in remote areas where access is limited. Technology will not replace human interaction, yet it can bring supportive services into the home and community. This was especially seen when care delivery was rapidly adapted to reduce transmission risk of COVID-19 across the globe in 2020, including for those providing or receiving in-person LTSS. Safety requirements, such as sharply restricting visitors to nursing homes and assisted living facilities, have increased the risk of social isolation and lack of access to routine medical care for millions of older adults. Technology can serve as a bridge when in-person care is not a viable option; however, COVID-19 has also exposed the limitations of a technology, especially for older adults who do not have access to broadband or personal computers.

During our interviews, numerous ideas for technology came up, ranging from remote monitoring to robots. Still, two main questions arose: who will pay for the integration of the technology, and how likely is it that it will be demonstrably cost-effective? New technology, from wearables and home surveillance to predictive analytics, promises to help lower costs and

## 136 New Models for Managing Longevity Risk

improve quality of care. Yet many programs are still in the pilot phase, requiring additional funding and coordination to achieve scale. To date, there is little evidence of incremental cost savings, and monitoring and evaluation costs add to the funding gap for start-ups and care providers.

### Promising new approaches

Emerging technologies have significant potential to assist older adults as they age and to better coordinate LTSS. Health and LTCI companies, as well as CMS, will play essential roles in adoption rates because many of these tools can be given or shared at a discount to participants in order to encourage use, as a potentially more effective distribution channel than a purely direct-to-consumer model. We see four emerging technologies that could maximize the independence of aging Americans and reduce the economic and health impacts of cognitive and physical limitations: (1) predictive analytics; (2) telehealth; (3) remote monitoring; and (4) assisted mobility. Also, we've identified several models that could be enhanced to ensure funding is available to test and then scale up these emerging technologies.

**Predictive analytics** With the availability of big data, predictive analytics have become ubiquitous. This capability allows predicting the future using data from the past (Davenport 2014), a valuable tool for diagnosticians and providers looking to improve the quality of care and lower costs. According to Deloitte (2019), the main areas of potential benefit from predictive analytics are the improvement of business operations, personal medicine to improve diagnosis and treatment, and cohort treatment and epidemiology to assess potential risk factors for public health. The Society of Actuaries (2017) found that 93 percent of health organizations say predictive analytics is vital to the future of their business, and an impressive 89 percent of providers claimed that they are currently using predictive analytics or are planning to adopt the technology within the next five years.

Data generated by new technologies may also allow service providers and insurers to intervene earlier and with more specificity to lower costs and improve quality. Tech giant Google has already made strides using predictive analytics to improve diagnostics and has had several high-profile successes. Google-owned DeepMind developed an algorithm that identified acute kidney disease 48 hours before physicians did (Tomasev et al. 2019).

The LTCI industry traditionally has had to estimate how many people would file claims, set their premiums, and enroll participants, hoping projections were accurate; but the forecasts were often not accurate. Many experts we interviewed observed that the health insurance industry has become much more aggressive about intervening to reduce risk, based on

data analytics. The LTCI industry could take advantage of these new technological tools to better manage risk, from improved underwriting with data on cohort characteristics, to coordinated claim management with a better understanding of specific issues such as falls prevention.

In partnership with the John A. Hartford Foundation, CVS Minute Clinics have agreed to integrate ‘Age-Friendly Health Systems’ practices into 1,100 clinics across the US (CVS 2014). They identified the 4Ms as evidence-based practices that emphasize:

- **What Matters:** Care aligned with each older adult’s health goals and care preferences.
- **Medication:** Use of age-friendly medications that do not interfere with goals and preferences, mobility, or mentation.
- **Mentation:** Prevention, treatment, and management of dementia, depression, and delirium.
- **Mobility:** Ensuring that older adults move safely every day to maintain function and do what matters.

By implementing these care principles delivered in convenient care settings with electronic data exchange capabilities, CVS seeks to provide more integrated care for treatment of chronic conditions associated with aging such as diabetes and hypertension (Dolansky and Pohnert 2019). The nurse practitioners who provide care to these older adults will be able to share data regarding the visits with participants’ health plans and providers.

**Telehealth** Broader adoption and reimbursement for telehealth could revolutionize the speed of health and LTC delivery as it can facilitate communication between providers and patients and expedite the delivery of care in emergencies. Telehealth is currently used mainly to manage certain chronic conditions such as diabetes and heart failure (CDC 2019a). The Centers for Disease Control and Prevention (CDC)’s National Diabetes Prevention Program has increased access and flexibility for the program by offering 200 of its curricula and handouts online (CDC 2019b).

Telehealth can also help reduce barriers to care for people who live far away from their providers, especially in rural communities, and for those who have transportation or mobility limitations. According to Eldercare Locator, a government-sponsored, national, toll-free hotline, the number one reason older adults call the hotline is because of transportation problems (National Association of Area Agencies on Aging 2020). Transportation barriers are frequently mentioned by patients as a major reason for missing appointments, and missed medical appointments are associated

## 138 New Models for Managing Longevity Risk

with increased medical costs for the patient, delayed care and communication between providers and patients, and increased use of emergency departments. For instance, [Sviokla et al. \(2010\)](#) reported that missed appointments cost the US health care system \$150 billion each year.

Despite its potential, telehealth use is not yet widespread, and has not been widely reimbursed for the patient or the provider. Due to COVID-19, however, we saw a rapid increase in telehealth by providers and patients.

In March 2020, CMS responded to the COVID-19 crisis and the need to provide necessary care to at-risk individuals by temporarily relaxing certain requirements for telehealth usage by Medicare providers. Prior to COVID, individuals had to live in rural areas, to be at an ‘originating site’ or designated medical facility to receive telehealth services. Under the new rules, telehealth has been expanded to cover almost all Medicare beneficiaries, including its use on smartphones, and the expansion of coverage to include non-COVID-related care ([CMS 2020](#)). In the past, getting patients to use telehealth was often a stumbling block for telehealth adoption. But in the wake of COVID-19, use of telehealth services expanded rapidly. From March to April 2020 alone, Medicare beneficiaries increased their use of telehealth by nearly 120-fold, from 11,000 to 1.3 million ([Alliance for Connected Care 2020](#)).

**Remote monitoring** Technology also permits providers to monitor their patients remotely and extend data gathering beyond the clinical setting ([Center for Connected Health Policy 2019](#)). Such remote monitoring can reduce hospital readmission rates, though more extensive studies are needed to compute return on investment for health outcomes ([Center for Connected Health Policy 2018](#)).

Of late, several high-profile technology firms have focused on remote monitoring. In 2019, Apple made a significant partnership with an MA plan to collect data from the Apple wrist watch, and additional Apple partnerships with Medicare private plans are likely ([Peters 2019](#)). Humana has also partnered with Philips to provide its high-risk MA members with Philips’ Lifeline medical alert service, a remote monitoring device ([Reuter 2019](#)).

Health plans are increasingly supplying their members with tools including iPads that patients can take home for a limited period following a hospital stay. CareMore Health, an integrated delivery system owned by Anthem, also offers remote monitoring as part of its suite of services to help patients manage their chronic conditions. For example, patients in their heart failure program are given a wireless scale to use at home that provides data directly to their clinician. The clinician will see whether a patient has experienced rapid weight gain, an indication that medical attention is required ([Hostetter et al. 2017](#)). New partnerships with existing consumer channels also show significant potential to improve access to data. The new

company model created by the merger of CVS Health and Aetna is poised to make such conveniences commonplace, using pharmacies as a significant delivery disruption. With stores located in virtually every US neighborhood, and the ability to integrate consumer and payer data, CVS predicts that the combined effort will improve the consumer health experience and build healthier communities (Servat and Super 2019).

One of the indirect impacts of the COVID-19 crisis on older adults, particularly in LTC facilities, is the enforcement of isolation to reduce risk of transmission. While the individuals in these care settings are the most at risk for adverse outcomes from the virus, the health risks from loneliness and social isolation can also significantly increase the likelihood of chronic illnesses and premature death. In response, the Advancing Connectivity during the Coronavirus to Ensure Support for Seniors (ACCESS) Act was introduced in April 2020 to expand access to technology for those in nursing homes and care facilities, and to allow residents to utilize telehealth services and virtual visits with loved ones while remaining socially distanced for their safety (US Senate, Office of Amy Klobuchar 2020). This legislation creates an environment that supports better connections for patient care and potentially improves health outcomes with both medical and non-medical intervention strategies without increasing patients' risk of COVID-19 transmission.

Health information technology can support advancements in care coordination and sharing of essential health information as individuals transition across care settings such as through long-term and post-acute care (LTPAC). Enhanced care coordination between acute care and LTPAC providers will enhance the quality of care provided in LTPAC facilities and reduce costs. Individuals receiving LTPAC services today frequently have chronic conditions and co-morbidities; transitions between care settings are common, creating the risk of complications, and often resulting in hospital readmission (Banger et al. 2020).

**Assisted mobility** As noted above, lack of access to transportation makes it difficult for some older adults to keep their health care appointments. Medicaid has long offered transportation as a covered benefit, but MA plans have only recently been offering this option. Some health plans have also begun offering vouchers for rideshare services such as Uber and Lyft. In 2016, CareMore Health recognized the cost savings potential of providing non-emergency medical transportation and carried out a pilot with rideshare service Lyft. It found that transportation costs decreased by 32 percent, among other positive outcomes, and so the firm expanded the service to 75,000 members nationally (Powers et al. 2016, 2018). Outside of medical appointments, transportation challenges limit older adults' independence and their ability to engage socially with their communities, a factor proven to be relevant to health outcomes. Recognizing the difficulty of getting

## 140 New Models for Managing Longevity Risk

around, the city of Monrovia in Southern California partnered with Lyft to offer subsidized rates with rides costing as little as 50 cents and up to \$3.50 (Servat and Super 2019).

Another development is delivery via apps for everything from groceries to home projects. An MIT AgeLab study found that using App-directed services (e.g. for household errands, transportation, and home-meal delivery) for aging adults wishing to remain in their own homes cost less than the average monthly cost of assisted living, even with the need for services increasing with individuals' diminishing physical capability (Miller et al. 2018).

**Funding vehicles** We also identified several models that could be enhanced to ensure existing funding is more efficiently allocated, and to allow for new types of financing to bridge existing gaps across a continuum of capital from grants to investments. These include:

- **The State Grants for Assistive Technology**, which increase accessibility to assistive technology for individuals with disabilities of all ages (ACL 2019). This program provides one grant to each state and territory, based mainly on population. Approximately \$28.1 million in grants was awarded in 2019, and many of those whom we interviewed agreed that there was insufficient funding for testing new technologies, and specifically for LTC applications. Government grants provide capital that is 'cost-free' in that the funding would not be repaid, which is critical for private companies that are reliant on generating revenue to pay investors. Given the success of the existing program, it could be expanded to the LTC market more broadly.
- **The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs** were created by the National Institute on Aging (NIA) to bring innovative technologies and treatments to market (NIA 2019). SBIR is designed to encourage American small businesses to engage in federal research and development with commercialization as the ultimate goal. The model achieved success, and in 2019 it provided an estimated \$105 million to start-ups in this space (Hannon 2020). The SBIR program is unique in that it can drive new research and technology innovation, and it will also support small businesses to grow and scale up new products that show potential. Additional investments could be instrumental in bringing more technologies to scale (SBA Office of Investment & Innovation 2015).
- **Impact investment funds** and other forms of capital can provide funding opportunities beyond government grants for new technology adoption. Impact investors tend to be those seeking some financial return but who may need less than the market rate if the social return is quantifiable. For example, the Clean Energy Trust Impact Fund provides seed funding to 'cleantech' companies which require assistance to move a product from

pilot to commercialization. The fund is structured to catalyze additional investment by providing capital at one of the riskiest stages of development. Parallels can be drawn from untested cleantech companies and those in the LTC space, as both have high costs to move past the pilot stage to scale up their operations, and both need customers, individual and strategic, for product adoption. Many cleantech companies have to rely on uptake from agencies like utility firms, much like LTC tech products that may need to be integrated into government or nonprofit service providers. Navigating public-private partnerships and gaining low cost capital could be a useful way to bring to scale new technology for LTC.

### **Barriers to expansion**

Adoption of technology in the LTC space has slowed in part because providers have not been eligible for the subsidies granted to hospitals and doctors under the 2019 Health Information Technology for Economic and Clinical Health (HITECH) Act. Even when adopted, many new technologies are still relatively unproven, and better data are required to show demonstrable improvements to care. Thus far, interventions from remote monitoring to predictive analytics have been structured as pilot programs while the results are gathered on efficacy and efficiency.

To improve and scale up the four promising practices listed above, the communication pathways and accuracy of the information moving between primary care doctors, specialists, hospital settings, and skilled nursing facilities must be reliable and easily shared. Interoperability (i.e. the capacity for different systems, devices, and applications to access, exchange, integrate, and cooperatively use data) remains a substantial challenge, especially for operations outside of hospital-based systems and physicians' offices. Poor communication can have serious medical consequences, while smooth transitions can improve care (JaWanna et al. 2018). The Office of the National Coordinator (ONC) for Health Information Technology showed that, as of 2017, seven of 10 hospitals studied still received summary care records via mail or fax (Johnson et al. 2018).

In March 2020, the ONC of Health Information Technology, in conjunction with CMS, released the 21st Century Cures Act Final Rule for expanding interoperability between patients, health care providers, and medical professionals. New requirements include the implementation of patient application program interface (API) services that facilitate access to information on health care costs and limited clinical information; patient clinical data exchange systems that create cumulative medical history records and ease patient transfer between payers; and the requirement of hospitals to notify a patient's other care providers of a change in patient status (e.g. admission, transfer, or discharge) (HHS 2020). The government can continue to improve interoperability by creating additional standards



## 142 New Models for Managing Longevity Risk

for implementation and software; increasing transparency regarding data and privacy; and incentivizing the appropriate use of electronic health information to improve health and well-being (DeSalvo 2015).

In summary, important hurdles remain for funding research and design efforts for new technology and scale successful programs. To advance technology solutions improving LTC financing and delivery, several public-private strategies are available and worth exploring further:

- Pilot test technology that has worked in the health care sector (e.g. predictive analytics, telehealth, remote monitoring, and assisted mobility in multiple locations across different settings of care).
- Improve interoperability by creating additional standards for implementation and software; increasing transparency regarding data and privacy; and incentivizing the appropriate use of electronic health information to improve health and well-being.
- Close the funding gap for technology to support LTC by establishing a federal-level small business seed fund targeting aging-related technology companies, modeled after the State Grant for Assistive Technology program; creating an impact investment fund to support the development of emerging technologies; and scaling up public-private subsidy programs for insurers and care providers to offer technology at low or no cost to users.

## Conclusion

Though new models to provide LTC are a pressing concern, Medicare today only covers minimal aspects of LTSS, and Medicaid eligibility is limited to individuals who meet strict income and asset requirements. However, most Americans are underprepared to self-fund the high cost of care and the private LTCI market has suffered severe restrictions in recent years. This study has identified a menu of potential solutions to help address the related LTC funding gaps, market failures, and care delivery needs.

Because of the urgency created by this impending crisis, it is crucial for all stakeholders to ask how each participate in this exploratory phase. Many new models for funding and service delivery warrant more testing and design. Our organization, the Milken Institute, seeks to continue this work through our Financial Innovations Lab series.<sup>3</sup>

## Acknowledgements

The authors thank Transamerica Institute for its generous support of this research, and Randy Hardock, Gretchen Alkema, Caitlin MacLean, Paul Irving, and Lauren Dunning for helpful comments. They especially appreciate Cara Levy for her excellent research assistance.

## **Notes**

1. In addition to Washington State, several other states are also working on LTC access and affordability, including Arizona, California, Hawaii, Illinois, and Michigan. Lawmakers in California, Illinois, and Michigan have approved studies that will explore residents' needs and a variety of potential LTC solutions. Arizona has embarked on a two-year pilot program in 2020 that supports caregivers by providing grants to reimburse for caregiving expenses, up to \$1,000 (Wiltz 2019). Hawaii has implemented the Kūpuna Caregivers Program, which supports unpaid family caregivers who also work outside the home for at least 30 hours per week. Program participants are eligible for up to \$70 per day in benefits, which can be applied toward a variety of services. The program aims to ease the financial burden of caregiving and help the family caregiver maintain his or her employment outside of the home (Paying for Senior Care 2015).
2. PAC includes rehabilitation or palliative services that people receive after, or in some cases instead of, a stay in an acute care hospital. Depending on the intensity of care the patient requires, treatment may include a stay in a facility, ongoing outpatient therapy, or care provided at home (Medicare Payment Advisory Commission 2020).
3. The Milken Institute Financial Innovations Labs are miniature think tanks designed to devise new business models, policy recommendations, capital structures, and financial technologies that can achieve concrete goals. By bringing together a diverse group of stakeholders, Financial Innovation Labs encourage collaboration between players who may not normally interact.

## **References**

- ACL (Administration for Community Living) (2019). *ACL State Grants for Assistive Technology Awards (ATSG) for the States/Territories FY 2019 Final Allocation*. ACL. Washington, DC: ACL.
- Aetna (2019). 'Aetna's 2020 Medicare Plans Connect Members with More Personalized Care and Benefits in their Homes and Communities,' Press Release, Hartford, CT, October 24.
- Alliance for Connected Care (2020). 'Medicare Members Using Telehealth Grew 120 Times in Early Weeks of COVID-19 as Regulations Eased,' Alliance for Connected Care Blog, May 28. <http://connectwithcare.org/medicare-members-using-telehealth-grew-120-times-in-early-weeks-of-covid-19-as-regulations-eased/>
- Anne Tumlinson Innovations & Long-Term Quality Alliance (2019). *A Turning Point in Medicare Policy: Guiding Principles for New Flexibility under Special Supplemental Benefits for the Chronically Ill*. Washington, DC: Long-Term Quality Alliance.
- Banger A., S. Rizk, J. Bagwell, and A. Ortiz (2020). *National Health IT Priorities for Research*. Washington, DC: The Office of the National Coordinator for Health Information Technology. <https://www.healthit.gov/sites/default/files/page/2020-01/PolicyandDevelopmentAgenda.pdf>
- Boccuti, C., G. Jacobsen, K. Orgera, and T. Neuman (2018). *Medigap Enrollment and Consumer Protections Vary Across States*. San Francisco: Kaiser Family Foundation. <https://www.kff.org/medicare/issue-brief/medigap-enrollment-and-consumer-protections-vary-across-states/>

## 144 New Models for Managing Longevity Risk

- BPC (Bipartisan Policy Center) (2017). *Financing Long-Term Services and Supports: Seeking Bipartisan Solutions in Politically Challenging Times*. Washington, DC: Bipartisan Policy Center.
- Bryant, B. (2019). 'Meals on Wheels Turns to Home Care to Help Win Medicare Advantage Partners,' *Home Health Care News*, August 8. <https://homehealthcarenews.com/2019/08/meals-on-wheels-turns-to-home-care-to-help-win-medicare-advantage-partners/>
- CDC (Centers for Disease Control and Prevention) (2019). *United States Life Tables, 2017*. CDC NVSS-68-7. Washington DC: Centers for Disease Control and Prevention Division of Vital Statistics.
- CDC (Centers for Disease Control and Prevention) (2019a). *Telehealth in Rural Communities: How the CDC Develops Programs That Deliver Care in New ways*. Atlanta, GA: Centers for Disease Control and Prevention <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/telehealth-in-rural-communities.htm>
- CDC (Centers for Disease Control and Prevention) (2019b). 'National Diabetes Prevention Program: About the National DPP.' <https://www.cdc.gov/diabetes/prevention/about.htm>
- Center for Connected Health Policy (2018). 'Remote Patient Monitoring Research Catalogue.' <https://www.cchpca.org/sites/default/files/2018-09/Remote%20Patient%20Monitoring%20Research%20Catalogue%20%28Aug%202018%29.pdf>
- Center for Connected Health Policy (2019). 'About Telehealth: Remote Patient Monitoring (RPM).' <https://www.cchpca.org/about/about-telehealth/remote-patient-monitoring-rpm>
- CMS (Centers for Medicare & Medicaid Services) (2019). 'Medicare Advantage Value-Based Insurance Design Model.' <https://innovation.cms.gov/initiatives/vbid/> (updated March 3, 2020).
- CMS (Centers for Medicare & Medicaid Services) (2020). 'Medicare Telemedicine Health Care Provider Fact Sheet.' <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet> (updated March 17, 2020).
- Cohen, M. A. (2019). 'Financing Long-Term Care: Challenges, Opportunities and Financing Alternatives,' Presentation to New York State Long Term Care Planning Project. Boston, MA: LeadingAge LTSS Center.
- Cooper, B., M. Moon, C. Schoen, and K. Davis (2005). *Medicare Extra: A Comprehensive Benefit Option for Medicare Beneficiaries*. New York City, NY: The Commonwealth Fund. [https://www.commonwealthfund.org/publications/journal-article/2005/oct/medicare-extra-comprehensive-benefit-option-medicare?redirect\\_source=/publications/in-the-literature/2005/oct/medicare-extra—a-comprehensive-benefit-option-for-medicare-beneficiaries](https://www.commonwealthfund.org/publications/journal-article/2005/oct/medicare-extra-comprehensive-benefit-option-medicare?redirect_source=/publications/in-the-literature/2005/oct/medicare-extra—a-comprehensive-benefit-option-for-medicare-beneficiaries)
- CVS (2014) 'Age Friendly Slide Presentation.' Shared on January 14, 2020.
- Davenport (2014). 'A Predictive Analytics Primer,' *Harvard Business Review*, Sept 2. <https://hbr.org/2014/09/a-predictive-analytics-primer>
- Deloitte (2019). *Predictive Analytics in Health Care: Emerging Value and Risks*. <https://www2.deloitte.com/us/en/insights/topics/analytics/predictive-analytics-health-care-value-risks.html>

- Department of Health and Human Services (2020). 'HHS Finalizes Historic Rules to Provide Patients More Control of Their Health Data,' Press Release, Washington, DC: March 9. <https://www.hhs.gov/about/news/2020/03/09/hhs-finalizes-historic-rules-to-provide-patients-more-control-of-their-health-data.html#:~:text=The%20ONC%20Final%20Rule%20identifies,certified%20health%20IT%2C%20health%20information>
- DeSalvo (2015). 'Health Information Technology: Where We Stand and Where We Need To Go.' Health Affairs Blog. <https://www.healthaffairs.org/doi/10.1377/hblog20150424.047271/full/>
- Dolansky, M. and A. Pohnert (2019). 'Implementing the Age-Friendly Health System into CVS Minute Clinics,' *Innovation in Aging*, 3(1): 149–150. [https://academic.oup.com/innovateage/article/3/Supplement\\_1/S149/5617219](https://academic.oup.com/innovateage/article/3/Supplement_1/S149/5617219)
- ElderLawAnswers (2018). 'Hybrid Policies Allow You to Have Your Long-Term Care Insurance Cake and Eat It, Too,' *ElderLawAnswers*. <https://www.elderlawanswers.com/hybrid-policies-allow-you-to-have-your-long-term-care-insurance-cake-and-eat-it-too-15541> (updated June 14, 2018).
- Favreault, M. and J. Dey (2015). *Long-Term Services and Supports for Older Americans: Risks and Financing*. Washington, DC: HHS Office of the Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy. <https://aspe.hhs.gov/basic-report/long-term-services-and-supports-older-americans-risks-and-financing-research-brief> (updated February 2016).
- Favreault, M. M., H. Gleckman, and R. W. Johnson (2015). 'Financing Long-Term Services And Supports: Options Reflect TradeOffs For Older Americans And Federal Spending,' *Health Affairs*, 34(12): 2181-91.
- Genworth (2019). *Genworth Cost of Care Survey 2019 Summary and Methodology*. Richmond, VA: Genworth. <https://pro.genworth.com/riiproweb/productinfo/pdf/131168.pdf>
- Gleckman, H. (2019). 'Interest Grows In Social Insurance For Long-Term Care. What Should It Look Like?' *Forbes*, September 4. <https://www.forbes.com/sites/howardgleckman/2019/09/04/interest-grows-in-social-insurance-for-long-term-care-what-should-it-look-like/#63c234715803>
- Hannon (2020). 'The Government Program Funding Startups for Older Adults,' *Forbes, Next Avenue*. <https://www.forbes.com/sites/nextavenue/2020/02/07/the-government-program-funding-startups-for-older-adults/#17fa987128da>
- HHS (United States Department of Health and Human Services) (2017). 'What is Medicare and What Does It Cover?' LongTermCare.gov. <https://longtermcare.acl.gov/medicare-medicaid-more/medicare.html> (updated November 14, 2017).
- Hilton, J. (2020). 'NAIC To Collect LTC Data In Bid To Create Uniform Price Hike Review,' *InsuranceNewsNet*. <https://insurancenewsnet.com/inarticle/naic-collects-ltc-data-in-bid-to-create-uniform-price-hike-review#.XjyZ72hKiUl> (updated January 14).
- Hostetter, M., S. Klein, and D. McCarthy (2017). *CareMore: Improving Outcomes and Controlling Health Care Spending for High-Needs Patients*. New York, NY: The Commonwealth Fund. <https://www.commonwealthfund.org/publications/case-study/2017/mar/caremore-improving-outcomes-and-controlling-health-care-spending>

## 146 New Models for Managing Longevity Risk

- Humana (2019). 'Social Determinants of Health.' <https://populationhealth.humana.com/social-determinants-of-health/>
- Insured Retirement Institute (2019). *Boomer Expectations for Retirement 2019: Ninth Annual Update on the Retirement Preparedness of the Boomer Generation*. Washington, DC: Insured Retirement Institute. [https://www.myirionline.org/docs/default-source/default-document-library/iri\\_babyboomers\\_whitepaper\\_2019\\_final.pdf?sfvrsn=0](https://www.myirionline.org/docs/default-source/default-document-library/iri_babyboomers_whitepaper_2019_final.pdf?sfvrsn=0)
- Jacobson, G., S. Griffin, T. Neuman, and K. Smith (2017). *Income and Assets of Medicare Beneficiaries, 2016–2035*. San Francisco, CA: Kaiser Family Foundation. <https://www.kff.org/medicare/issue-brief/income-and-assets-of-medicare-beneficiaries-2016-2035/>
- Jacobson, G., M. Freed, A. Damico, and T. Neuman (2019). *A Dozen Facts about Medicare Advantage in 2019*. San Francisco, CA: Kaiser Family Foundation. <https://www.kff.org/medicare/issue-brief/a-dozen-facts-about-medicare-advantage-in-2019/>
- JaWanna, H., Y. Pylypchuk, and V. Patel (2018) *Electronic Health Record Adoption and Interoperability among US Skilled Nursing Facilities and Home Health Agencies in 2017*. ONC Data Brief 41. Washington, DC: The Office of the National Coordinator for Health Information Technology. <https://www.healthit.gov/sites/default/files/page/2018-11/Electronic-Health-Record-Adoption-and-Interoperability-among-U.S.-Skilled-Nursing-Facilities-and-Home-Health-Agencies-in-2017.pdf>
- John Cutler Consulting (2018). *Enhanced Home Care Benefit in Medicare Supplemental Plans*. St. Paul, MN: Minnesota Department of Human Services Own Your Future Initiative. [https://mn.gov/dhs/assets/John-Cutler-final-report\\_tcm1053-373468.pdf](https://mn.gov/dhs/assets/John-Cutler-final-report_tcm1053-373468.pdf)
- Johnson, C., Y. Pylypchuk, and V. Patel (2018). *Methods Used to Enable Interoperability among US Non-Federal Acute Care Hospitals in 2017*. ONC Data Brief 43. Washington, DC: The Office of the National Coordinator for Health Information Technology. [https://www.healthit.gov/sites/default/files/page/2018-12/Methods-Used-to-Enable-Interoperability-among-U.S.-Non-Federal-Acute-Care-Hospitals-in-2017\\_0.pdf](https://www.healthit.gov/sites/default/files/page/2018-12/Methods-Used-to-Enable-Interoperability-among-U.S.-Non-Federal-Acute-Care-Hospitals-in-2017_0.pdf)
- Kaiser Family Foundation (2019). *Medicare Advantage*. San Francisco, CA: Kaiser Family Foundation. <https://www.kff.org/medicare/fact-sheet/medicare-advantage>
- Katz, R. (2019). 'Washington State: First Out of the Gate on LTC Financing,' *Leading Age*. <https://www.leadingage.org/legislation/washington-state-first-out-gate-ltc-financing> (updated May 1).
- Lankford, Kimberly (2020). 'FAQs about Coronavirus and Long-Term Care Insurance,' *US News & World Report*, May 22.
- Long-Term Quality Alliance. (2018). *Medicare Advantage's New Supplemental Benefit for 2019: Plan Views and Responses*. Washington, DC: Long-term Quality Alliance. <http://www.ltqa.org/wp-content/themes/ltqaMain/custom/images/LTQA-Report-on-MA-Flexible-Supplemental-Benefits-FINAL-11-9-18.pdf>

- Long-term Quality Alliance and ATI Advisory (2020). *Medicare Advantage and Supplemental Benefits: New Data and Principles for Implementation*. Washington, DC. <http://www.ltqa.org/medicare-advantage-and-supplemental-benefits-new-data-and-principles-for-implementation/>
- Magnan, S. (2017). *Social Determinants of Health 101 for Health Care: Five Plus Five*. Washington, DC: National Academy of Medicine. <https://nam.edu/social-determinants-of-health-101-for-health-care-five-plus-five>
- Medicare Payment Advisory Commission (2020). 'Post-Acute Care,' *Medpac*. <http://www.medpac.gov/-research-areas-/post-acute-care>
- Millken Institute (2008). *Financial Innovations for Catastrophic Risk: Cat Bonds and Beyond Financial Innovations Lab Report*. Santa Monica, CA: Millken Institute.
- Miller J., C. Ward, C. Lee, L. D'Ambrosio, and J. Coughlin (2018). 'Sharing is Caring: The Potential of the Sharing Economy to Support Aging in Place.' *Gerontology and Geriatrics Education*, 10.1080. <https://www.tandfonline.com/doi/abs/10.1080/02701960.2018.1428575>
- Murphy-Barron, C. M., P. M. Pelizarri, and B. Regan (2019). *The Medicare Advantage Value Based Insurance Design Model: Overview and Considerations*. Seattle, WA: Milliman. <https://www.milliman.com/insight/The-Medicare-Advantage-Value-Based-Insurance-Design-Model-Overview-and-considerations>
- NAIC (National Association of Insurance Commissioners) (2019). *Letter to Chairman of the House Ways and Means Committee, Richard E. Neal*. Kansas City, MO: NAIC. <https://cdn2.hubspot.net/hubfs/2635471/NAIC%20Response%20to%20W&M%20LTSS%20Letter%20FINAL.pdf>
- NAIC (National Association of Insurance Commissioners) (2020). 'Long-Term Care Insurance,' National Association of Insurance Commissioners. [https://content.naic.org/cipr\\_topics/topic\\_long\\_term\\_care\\_insurance.htm](https://content.naic.org/cipr_topics/topic_long_term_care_insurance.htm) (updated February 4, 2020).
- National Association of Area Agencies on Aging (2020). 'Eldercare Location,' *n4a*. <https://www.n4a.org/eldercarelocator>
- NIA (National Institute on Aging) (2019). 'NIA Small Business Programs (SBIR & STTR),' <https://www.nia.nih.gov/research/osbr>
- New York Life (2018). 'New York Life Reimagines Long-term Care Insurance with the Launch of NYL My Care,' Press Release, New York, NY, September 5.
- Nichols, L. and L. Taylor (2018). 'Social Determinants as Public Goods: A New Approach to Financing Key Investments In Healthy Communities,' *Health Affairs*, 37(8). <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2018.0039>
- O'Leary Marketing Associates LLC (2018). *LifeStage Protection Product Final Report Prepared for Minnesota Department of Human Services Own Your Future Initiative*. Schaumburg, IL: SOA. [https://mn.gov/dhs/assets/LifeStage-protection-product%E2%80%9393final-report\\_tcm1053-373463.pdf](https://mn.gov/dhs/assets/LifeStage-protection-product%E2%80%9393final-report_tcm1053-373463.pdf)
- Paying for Senior Care (2015). *Hawaii's Kupuna Caregivers Program: Helping Working Families to Care for their Loved Ones*. Charlotte, NC. <https://www.paying-forseniorcare.com/hawaii/kupuna-caregivers>

## 148 New Models for Managing Longevity Risk

- Peters, J. (2019). 'Medicare Insurers Are Starting to Offer Big Apple Watch Discounts,' *The Verge*, October 8. <https://www.theverge.com/2019/10/8/20904804/apple-watch-medicare-insurance-discounts-devoted-health>
- Powers, B. W., S. Rinefort, and S. Jain (2016). 'Nonemergency Medical Transportation Delivering Care in the Era of Lyft and Uber,' *JAMA*, 316(9): 921–922.
- Powers, B. W., S. Rinefort, and S. Jain (2018). 'Shifting Non-Emergency Medical Transportation to Lyft Improves Patient Experience and Lowers Costs,' *Health Affairs Blog*, September 13: <https://www.healthaffairs.org/doi/10.1377/hblog20180907.685440/full/>
- Reuter, E. (2019). 'Philips, Humana to Offer Remote Monitoring for at-Risk Seniors,' *MedCity News*, December 10. <https://medcitynews.com/2019/12/philips-humana-to-offer-remote-monitoring-for-high-risk-seniors/>
- SBA (Small Business Administration) Office of Investment & Innovation (2015). 'SBIR-STTR Presentation.' SBA-HQ, Washington, DC. [https://www.sbir.gov/sites/default/files/SBA\\_OII\\_SBIR\\_STTR\\_Presentation\\_for\\_General\\_Public\\_3-20-15.pdf](https://www.sbir.gov/sites/default/files/SBA_OII_SBIR_STTR_Presentation_for_General_Public_3-20-15.pdf)
- Scism, L. (2018). 'Millions Bought Insurance to Cover Retirement Health Costs: Now They Face an Awful Choice,' *The Wall Street Journal*. [https://www.wsj.com/articles/millions-bought-insurance-to-cover-retirement-health-costs-now-they-face-an-awful-choice-1516206708?mod=article\\_inline](https://www.wsj.com/articles/millions-bought-insurance-to-cover-retirement-health-costs-now-they-face-an-awful-choice-1516206708?mod=article_inline) (updated January 17, 2018).
- Servat, C. and N. Super (2019). *Age-Forward Cities for 2030*. Santa Monica, CA: The Milken Institute Center for the Future of Aging. <https://milkeninstitute.org/reports/age-forward-cities-2030>
- Skopec, L., C. Ramos, and J. Aarons (2019). *Are Medicare Advantage Plans Using New Supplemental Benefit Flexibility to Address Enrollees' Health-Related Social Needs?* Washington, DC: The Urban Institute.
- Society of Actuaries (2017). '2017 Predictive Analytics in Healthcare Trend Forecast,' *SOA Health Trends Forecast 2017*. Schaumburg, IL: Society of Actuaries.
- Society of Actuaries (2019). *A Primer on the Hybrid LTC Market*. Schaumburg, IL: Society of Actuaries.
- Sviokla, J., B. Schroeder, and T. Weakland (2010). 'How Behavioral Economics Can Help Cure the Health Care Crisis,' *Harvard Business Review*. <https://hbr.org/2010/03/how-behavioral-economics-can-h>
- Tomasev N., X. Glorot, and J. W. Rae (2019). 'A Clinically Applicable Approach to Continuous Prediction of Future Acute Kidney Injury,' *Nature*, 572(7767): 116–119.
- Ujvari, K. (2018). 'Disrupting the Marketplace: The State of Private Long-Term Care Insurance, 2018 Update.' *AARP Public Policy Institute Insight on the Issues*. Washington, DC: AARP Public Policy Institute, 138.
- United States Census Bureau (2018). 'Older People Projected to Outnumber Children for First Time in US History,' Press Release, Washington, DC, March 13
- United States House Committee on Energy and Commerce (2018). 'Medicare Long-term Care Services and Supports Act,' Discussion Draft, Washington, DC. <https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/LTSS%20Act%20May%202018.pdf>

- United States Senate, Office of Amy Klobuchar (2020). 'Klobuchar, Casey Introduce Legislation to Increase Seniors' Virtual Connection to Health Care and Community Amidst Coronavirus Outbreak,' Press Release, Washington, DC, March 19. <https://www.klobuchar.senate.gov/public/index.cfm/2020/3/klobuchar-casey-introduce-legislation-to-increase-seniors-virtual-connection-to-health-care-and-community-amidst-coronavirus-outbreak>
- Washingtonians for a Responsible Future (2019). 'LONG-TERM CARE TRUST ACT: Our Long-Term Care System Makes Families Poor and Threatens to Bankrupt Our State's Budget,' Washingtonians for a Responsible Future, Washington, DC.
- Wiltz, T. (2019). 'Getting Older, Going Broke: Who's Going to Pay for Long-term Care?' The Pew Charitable Trusts: July 25. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/07/25/getting-older-going-broke-whos-going-to-pay-for-long-term-care>