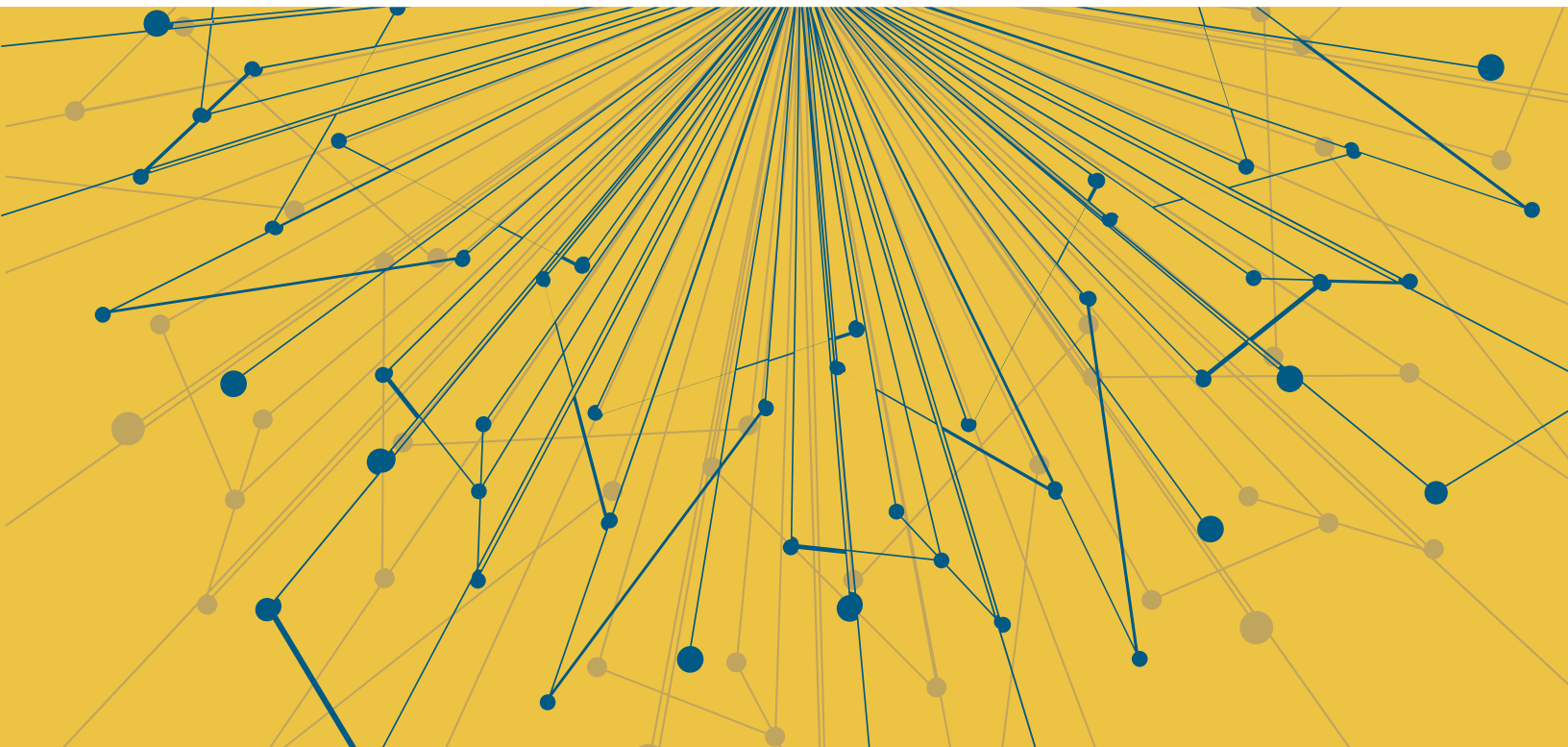




# California Health Information Technology and Exchange

*Opportunities and Priorities for Older Adults*



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# I. EXECUTIVE SUMMARY

Data exchange is crucial to coordinating care and services for older Californians, particularly those who have an array of health and social needs and require multidisciplinary teams to manage care and transitions between settings. Too often, however, health care and social services are siloed, which creates barriers that limit data sharing needed to improve care and outcomes.<sup>1</sup>

Archstone Foundation seeks to enhance collaboration between the health care and social services sectors to improve the health and well-being of older adults and their caregivers. Archstone Foundation has established a funding strategy that prioritizes grantmaking along three dimensions: Teams, Training, and Technology strategies (the Three Ts), with justice, diversity, equity, and inclusion interwoven throughout these core strategies.

This strategic landscape, opportunities assessment, and funding priorities report provides an overview of the data exchange landscape in California as it relates to older adults and identifies opportunity areas where Archstone Foundation investments could have maximum impact.

As health and human services are increasingly delivered and supported by digital technologies, it is essential that older adults and caregivers have access to and capability to use digital and broadband-enabled technologies. However, older adults in California still face a digital divide when it comes to the adoption and use of smartphones and the internet, which remain lower for older adults than younger residents.

Similarly, it is important for the health and human service providers who care for older adults to have the health information technology (HIT) and data exchange capabilities to seamlessly use and exchange data with other settings and care team members. While most acute care hospitals and physician organizations have benefited from funding programs that have enabled adoption of HIT and data exchange capabilities over the past decade, many providers who predominantly care for older adults were not eligible for those funding programs, and their capabilities have lagged.

This report identifies funding opportunities and a set of principles that Archstone Foundation should consider in order to assess the efficacy of interventions and deploy resources to advance technology and data exchange that enable better team-based care for older adults. They are organized into three domains: “Collaboration and Partnerships,” “Research and Evaluation,” and “Pilot Programs,” and are summarized in the table below.



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DOMAINS	POTENTIAL AREAS OF FOCUS
<p style="text-align: center;"><b>1.</b> <b>Collaboration and Partnerships</b></p>	<p>A. <b>Partnerships with philanthropies, research institutions, and others</b> to expand scope and scale of projects, collectively vet projects, and support research and evaluation.</p>
	<p>B. <b>Partnerships with California state and county agencies</b> to support demonstrations and analysis of programs and policies that have implications for older adults.</p>
<p style="text-align: center;"><b>2.</b> <b>Research and Evaluation</b></p>	<p>A. <b>White papers and structured evaluations focusing on California policy and program priorities</b>, assessing care settings, provider types, or other aspects of care delivery that have limited technology-enabled services and human resource capabilities needed to support data exchange.</p>
	<p>B. <b>Gaps and opportunities in sharing information and supporting referrals with human service organizations</b></p>
	<p>C. <b>Demographic information</b> that informs a better understanding of older adults' needs and where interventions may be most effective.</p>
	<p>D. <b>Approaches to engaging older adults, caregivers, and the workforce</b> providing services to older adults through technology.</p>
<p style="text-align: center;"><b>3.</b> <b>Pilot Programs</b></p>	<p>A. Pilot programs that <b>deploy technology-enabled services, training, technical assistance (TA), and content to support diversion and discharge from institutional settings</b> in lieu of care being delivered in the home, which is the overwhelming preference of older adults.</p>
	<p>B. Pilot programs that seek to <b>improve data exchange</b> between social and human service organizations and health care organizations that care for older adults, both of which have historically had limited data exchange capabilities.</p>

As Archstone Foundation pursues these and other initiatives to improve team-based care for older adults, there are several potential challenges to be mindful of:

- **Change Management.** Introducing new technologies or care models can be disruptive to existing workflows, resulting in adoption resistance from care team members.
- **Workforce.** Poor data and technology illiteracy among health care workers are common barriers to the digital transformation of health care.<sup>2</sup>
- **Broadband Adoption.** Access to high-speed internet is not yet ubiquitous in California, particularly among older adults, rural settings, and organizations that care for older adults.<sup>3,4</sup>
- **Unproven Initiatives, Services, and Technologies.** There is a constant stream of exciting new technology and data exchange solutions being introduced in the market, but many of them are largely untested; many will fail to gain traction or will be challenging to sustain and scale.
- **Remote Patient Monitoring Technologies.** Without basic data exchange infrastructure in place, it is exceedingly difficult and labor-intensive to systematically incorporate data generated by remote patient monitoring technologies into workflows.
- **Cost, Complexity, and Business Case for Interoperable Data Exchange.** The cost and complexity of implementing the technologies, tools, and systems needed for interoperable data exchange have meant that the promise of better data exchange alone is not always a compelling enough business rationale to drive actual exchange.

These challenges can be addressed through careful deliberation of potential pitfalls at the outset of any initiative Archstone Foundation may consider pursuing. Indeed, the landscape of data exchange in California presents significant opportunities for Archstone Foundation to deploy investments that advance cross-sector, team-based care for older adults. As Archstone Foundation continues on its journey to support data exchange and technology that enable better care for older adults, it should consider the optimal mix of funding opportunities and maintain a willingness to pivot based on changes in the policy, regulatory, and business landscape.



## II. INTRODUCTION

Older Californians are the bedrock of our communities. They serve as leaders of our local businesses, schools, churches, nonprofits, and government agencies; they are heads of our households and families; and they all contribute to the health, strength, perspective, and vibrancy of our society. Older Californians have varying levels of health and social needs. While many independently reside in the community without intensive health or social services, others require multiple supports to live in the community or reside in a nursing home or other institutional setting.

Data exchange is crucial to coordinating care and services for older Californians, particularly those who have an array of health and social needs and require multidisciplinary teams to help coordinate and manage care and transitions between settings. Too often, however, health care and social services are siloed, which creates barriers that limit data sharing needed to improve care coordination, transitions, and management.<sup>5</sup> Team-based care is most effective when it takes advantage of communications and information technology, and when all members of a team, including older people and their caregivers and families, have real-time access to care plans and notice of important changes of health status, such as a hospitalization or emergency department visits.<sup>6</sup>

Archstone Foundation seeks to enhance collaboration between the health care and social services sectors to improve the health and well-being of older adults and their caregivers. Archstone Foundation has established a funding strategy that prioritizes grantmaking along three dimensions: Teams, Training, and Technology strategies (the Three Ts), with justice, diversity, equity, and inclusion interwoven throughout these core strategies. Specifically, the Three Ts comprise the following types of projects:

- **Teams:** projects that can advance models of care teams, demonstrate improved outcomes for older adults and their families, and are structured to achieve more cost-effective care.
- **Training:** projects focused on training health care and social service providers on effective evidence-based team care models that advance care for older adults.
- **Technology:** projects that promote the adoption of technologies that facilitate teamwork between health care and social services providers and empower older adults and their families to direct their care. In particular, Archstone Foundation supports efforts to develop technical specifications and information infrastructure that enable better care coordination, advocates for better regulatory frameworks, and demonstrates the benefits of new technology to older adults, caregivers, and the full range of stakeholders in health and social services systems.

California is engaged in several major initiatives related to aging and data sharing (Master Plan for Aging, Health and Human Services Data Exchange Framework, California Advancing and Innovating Medi-Cal (CalAIM), and more), which may provide synergies and opportunities to amplify investments from the private sector and philanthropic organizations. This report on strategic landscape, opportunities assessment, and funding priorities will provide an overview of the data exchange landscape in California as it relates to older Californians and identify opportunity areas where Archstone Foundation investments could have maximum impact.

## III. METHODOLOGY

The findings of this report were informed by the following activities:

- **Research and analysis of the health information technology (HIT) and data exchange landscape and funding initiatives in California.** We reviewed published reports on the current state of health information exchange (HIE) in California and funding initiatives from the state, as well as over a dozen philanthropic and advocacy organizations that focus on older adults. Research was used to identify gaps in the HIT and data exchange funding landscape and formulate a set of “investment hypotheses” detailing how Archstone Foundation could deploy resources to address them. *See Appendix A for the investment hypotheses.*
- **Subject matter expert interviews.** We conducted interviews with 11 HIT, data exchange, and policy subject matter experts in August and September 2022 to identify current gaps and opportunities, and needs for consumers, providers, and institutions who provide health-related services to older adults. We used input from the interviews to refine our investment hypotheses. *See Appendix B for a full list of interviewees.*
- **Stakeholder workshops.** We facilitated workshops in September and November 2022, in which representatives from a dozen stakeholder organizations participated. The first workshop focused on validating and refining the investment hypotheses and beginning to identify potential funding opportunities for Archstone Foundation to address California’s HIT and data exchange gaps that inhibit team-based care for older adults. The second workshop focused on validating and refining potential funding opportunities. *See Appendix C for a full list of workshop participants.*



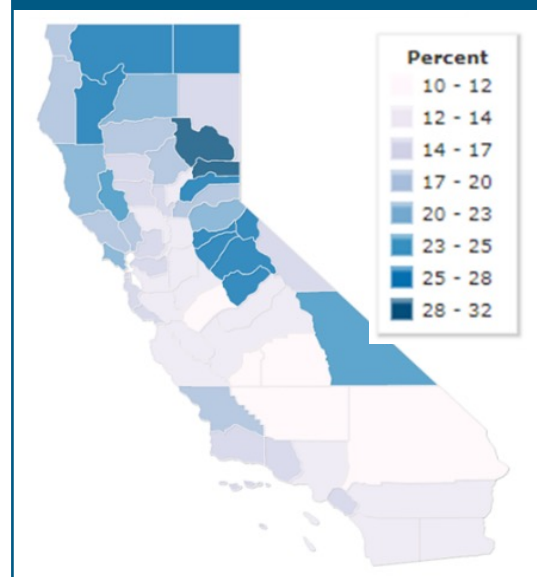
# IV. HEALTH INFORMATION TECHNOLOGY AND HEALTH INFORMATION EXCHANGE LANDSCAPE ASSESSMENT

## a. Older Adults in California and Where They Live

Persons aged 65 and over accounted for 15.2% of the population or 5.96 million people in California in 2021.<sup>7</sup> Over the next 30 years, California's population over the age of 65 is expected to grow by more than two-thirds, an increase of over 4.5 million older adults by 2052.<sup>8</sup> The fastest-growing groups of adults are aged 80 and older, Latinx, and Asians, and women will continue to make up the majority of older adults.<sup>5</sup>

As shown by the map, concentrations of older Californians tend to be highest in rural, inland counties.<sup>9</sup> Most reside in the community, with 79% reporting living with others and 21% reporting living alone.<sup>10</sup> Among Californians residing in institutional care settings, there are approximately 185,000 in residential care facilities for the elderly (RCFEs),<sup>12</sup> including assisted living, memory care, and continuing care retirement communities, and approximately 93,000 in certified nursing facilities.<sup>13</sup>

Percentage of People 65 Years & Older by County in California



Source: US Census Bureau, American Community Survey (ACS), 2020.

## b. Health and Social Needs of Older Californians

As we age, we tend to require increasing levels of health and human services supports to lead a healthy and independent life. These supports, however, can put a financial strain on older adults, particularly those who have fewer resources and need services that are not covered by health insurance or that require significant cost sharing. In 2021, 19% of older adults over 65 in the U.S. reported cost as an obstacle in getting care.<sup>14</sup> In California, nearly three million adults over age 50 struggle to make ends meet while facing significant health challenges.<sup>15</sup> Almost one-third of California's older adults live below 200% of the Federal Poverty Level (FPL), and three out of ten do not have enough income to cover their basic needs.<sup>16</sup> One out of four older adult households faces a housing cost burden, spending more than 30% of their income on housing. Twenty-eight percent of California's older adults have incomes that are below the estimated amount an older adult would need to meet their basic needs, as measured by the Elder Economic Security Standard™ Index (Elder Index) created by Wider Opportunities for Women and the Gerontology Institute at the University of Massachusetts Boston.

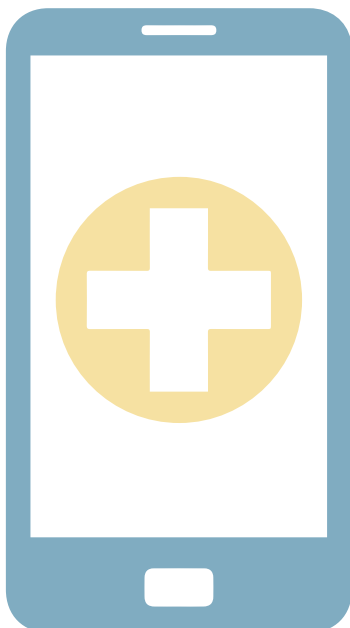
Nationally, according to 2015 data from the Centers for Disease Control and Prevention, 86% of adults over 65 have at least one, 56% have at least two, and 23% have at least three chronic health conditions, including diabetes, cardiovascular disease, chronic obstructive pulmonary disease, asthma, cancer, or arthritis.<sup>17</sup> As a result of the increased prevalence of diseases and disabilities, 89% of adults 65 or older report they are taking any kind of medication, and 54% report taking four or more prescription medications.<sup>18</sup> In California, according to the Master Plan for Aging Dashboard, in 2020, 9% of residents aged 60 or older reported having a disability status indicator (i.e., difficulty concentrating, remembering, or making decisions, running errands alone, or dressing or bathing), 3% reported having two indicators, and 2% reported having all three.<sup>19,20</sup>

Many older adults eventually need long-term services and supports (LTSS) to safely remain in the community, though specific LTSS needs will vary from person to person. Data from the California LTSS study found that more than half (54.6%) of respondents reported needing help from another person for routine care, one in five reported needing help with personal care, and two in five reported either that they could use more help or that they get no help at all with either routine or personal care.<sup>21</sup> There were several adverse consequences experienced by adults with unmet needs for LTSS, with nearly half (45.8%) staying at home due to difficulty going outside, 18.8% going without groceries or personal items due to difficulties shopping, and more than one in four (27.4%) making a mistake when taking their medications.

### **c. Older Californians' Access to Technology**

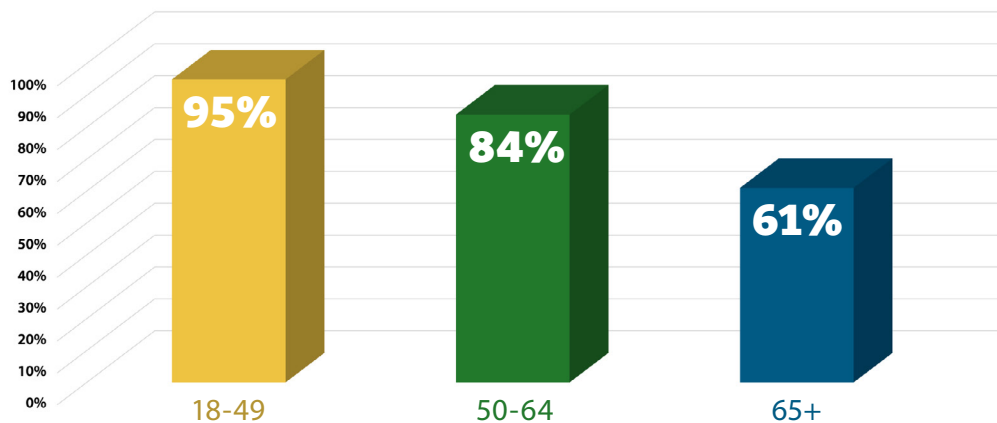
As health and human services are increasingly delivered and supported by digital technologies, it is essential that older adults and their caregivers have access to and the capability to use digital and broadband-enabled technologies. For example, telehealth visits conducted via smartphone allow the treating provider to see their patient and virtually examine any externally visible ailments. Telehealth usage skyrocketed during the COVID-19

pandemic as many medical practices restricted in-person appointments for routine care and elective procedures, and the Centers for Medicare and Medicaid Services (CMS) and state Medicaid agencies used emergency authority to loosen restrictions on telehealth use, increasing 63-fold among Medicare Part B beneficiaries from approximately 840,000 visits in 2019 to nearly 52.7 million visits in 2020.<sup>22,23</sup> While telehealth usage has declined somewhat since its peak in 2020, it is likely to remain significantly higher than pre-pandemic levels and will continue to be an important option for older adults to receive care.<sup>24,25</sup> In addition, computers, smartphones, and tablets can serve as powerful tools for older adults to maintain connections in their communities and combat social isolation.<sup>26</sup>



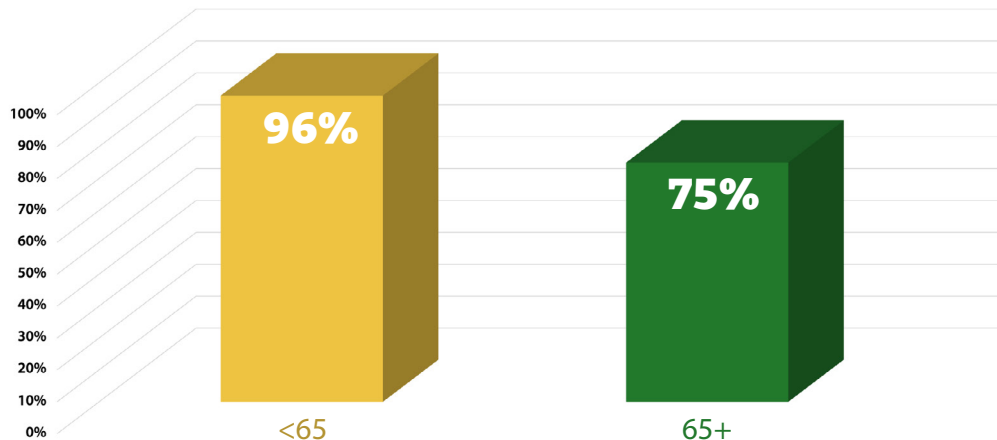
However, older adults are less likely to own a smartphone or have access to broadband internet than their younger counterparts. A 2021 Pew Research Center survey found that 61% of adults 65 and older own a smartphone, compared to 84% for adults 50 to 64 and over 95% for adults 18 to 49.<sup>27</sup> Older adults also have lower internet usage (75% of those 65 and older) than other age groups (over 96%).<sup>28</sup> In California, a 2021 survey by the California Emerging Technology Fund found that 77% of adults 65 or older have high-speed internet connectivity at home through a computing device or a smartphone compared to 90% statewide.<sup>29</sup> Though broadband adoption among older adults is steadily increasing—from 68% in 2019 to 78% in 2021—broadband adoption rates for older adults still remain lower than other age groups at or above 90% adoption.<sup>30</sup>

### SMART PHONE OWNERSHIP BY AGE GROUP (NATIONAL)



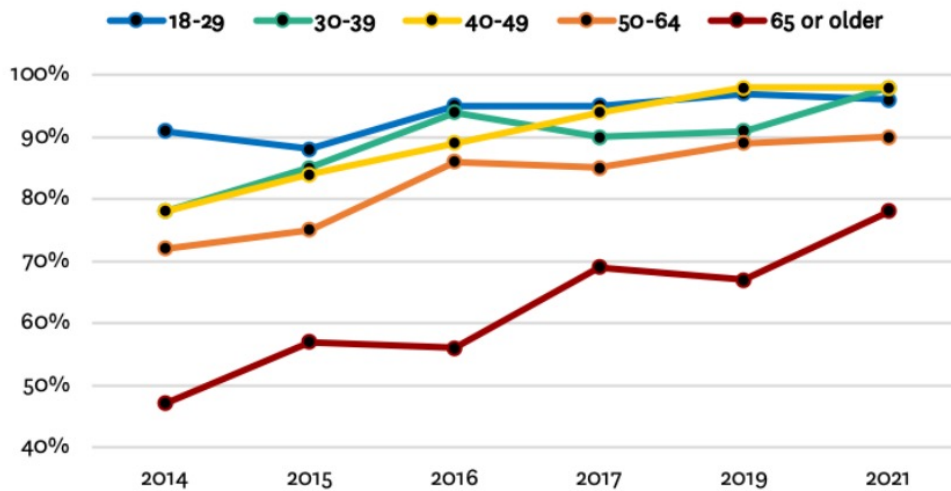
Source: "Mobile Fact Sheet," Pew Research Center. Apr. 2021. Available at <https://www.pewresearch.org/internet/fact-sheet/mobile/>.

### INTERNET USAGE BY AGE GROUP (NATIONAL)



Source: "Internet/Broadband Fact Sheet," Pew Research Center. Apr. 2021. Available at <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>.

## BROADBAND ADOPTION BY AGE GROUP



Source: "Internet/Broadband Fact Sheet," Pew Research Center, Apr. 2021. Available at <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>.

### d. Landscape of HIT and Data Exchange to Support Care for Older Adults

Health and human services data exchange in California today varies greatly depending on the type of organization and the type of data being exchanged. This is particularly true for the health and human service providers who care for older adults. Some types of providers, such as acute care hospitals and physician practices, have benefited from Health Information Technology for Economic and Clinical Health (HITECH) Act, the Medi-Cal EHR (Electronic Health Record) Incentive Program, the California Health Information Exchange Onboarding Program (Cal-HOP), and other funding programs, and have made significant gains in HIT and data exchange capabilities over the previous decade.<sup>35</sup> However, HIT adoption and data exchange capabilities among several types of health and human service providers who care for older adults that were not eligible for such funding programs have lagged those who were.



## KEY STATE PROGRAMS RELATED TO OLDER ADULTS AND DATA EXCHANGE

<p>Master Plan for Aging<sup>31</sup></p>	<p>A “blueprint for aging across the lifespan . . . [that] calls on all California communities to build a California for All Ages.” Among the plan’s five goals and 123 strategies, it seeks to “close the [health] equity gap and increase life expectancy” by innovating and testing new models of health care delivery, supporting lifelong healthy aging, and expanding geriatric care and possibilities for care in the home.</p>
<p>Health and Human Services Data Exchange Framework (DxF)<sup>32</sup></p>	<p>The DxF will result in a single data-sharing agreement (DSA) and common set of policies and procedures that will govern the exchange of health information among health care entities and government agencies beginning in June 2024. Implementation of the DxF and its DSA will ensure that “every Californian, and the health and human service providers and organizations that care for them, will have timely and secure access to usable electronic information that is needed to address their health and social needs and enable the effective and equitable delivery of services to improve their lives and wellbeing.”</p>
<p>CalAIM<sup>33</sup></p>	<p>A long-term commitment to transform and strengthen Medi-Cal, offering Californians a more equitable, coordinated, and person-centered approach to maximizing their health and life trajectory. This includes a transition to Statewide Dual Eligible Special Needs Plans and Managed Long-Term Services and Supports to coordinate all Medicare and Medi-Cal benefits for enrollees who are eligible for both programs. CalAIM will also transition Medi-Cal to statewide, managed long-term services and supports to better coordinate care, simplify administration, and provide a more integrated experience.</p>
<p>California Department of Health Care Services (DHCS) Gap Analysis and Multi-Year Roadmap<sup>34</sup></p>	<p>Set to launch in 2022 to assess the gaps in the home- and community-based services (HCBS) and Managed Long-Term Services and Supports (MLTSS) programs and networks.</p>

## FOUNDATIONAL DATA PRIVACY LAWS

### Federal

- **The Health Insurance Portability and Accountability Act (HIPAA)** is the foundational regulation governing data sharing, access, and use. HIPAA safeguards patient privacy by limiting the sharing of protected health information (PHI) by covered entities and their business associates to treatment, payment, and operations, and a limited number of other specific purposes, such as public health.
- **42 C.F.R. Part 2**, the federal substance use disorder (SUD) confidentiality regulation, applies to some categories of SUD information and is often stricter than HIPAA, in part because the regulation does not permit disclosures of information for treatment or care coordination purposes without individual consent.

### California

- **The California Confidentiality of Medical Information Act (CMIA)** is similar in many ways to HIPAA; however, it imposes some requirements that go beyond HIPAA, such as additional restrictions related to authorization forms.
- **Health and Safety Code Section 11845.5**, which mirrors 42 C.F.R. Part 2 in many respects but applies to a broader class of providers.





**The following illustrative example is intended to help clarify the importance of data exchange.**

*A 75-year-old woman has arthritis and diabetes and lives at home. After a fall renders her unable to walk, she dials 911 and is transported via ambulance to a hospital emergency department (ED) for treatment. The ED is able to access some of her historical health information through its connection with a Health Information Organization (HIO), helping to inform her treatment plan. Her daughter, listed as the emergency contact, is also informed of her mother's status, and her primary care provider receives an event notification through the same HIO.*

*Once the treatment plan is finalized, and the woman is stabilized, she is sent to a skilled nursing facility (SNF) for rehabilitation treatment. However, the SNF has a rudimentary EHR that is not interoperable with the hospital's EHR, and there are delays in treatment while the SNF calls the hospital to request the treatment plan be faxed over.*

*After a few weeks in the SNF, the woman has regained enough mobility to be discharged and returns home. While she tells her daughter that she is going home, no electronic event notification is generated to inform the woman's primary care physician (PCP), so the PCP remains unaware that their patient has been discharged. When the woman arrives home, the food in her refrigerator is spoiled, and she is still unable to drive for some time. Although there are mobile food pantry programs for older adults, the woman and daughter are unaware of these programs, and the PCP, who is aware, did not know the woman had been sent home. The daughter ultimately ends up taking a week of unpaid leave from work to help care for her mom at home. If the SNF had a connection with an HIO, the discharge could have triggered a notification to her PCP and referrals to community services, such as the mobile food pantry.*

*This scenario illustrates gaps in the health care system's data infrastructure and exchange capabilities, particularly among certain segments of providers who care for older adults. These gaps can have real-world consequences for older adults and caregivers. Addressing these gaps will help improve outcomes and reduce disparities in health, as well as decrease mental, physical, and financial stress for older adults and their families.*

This section will provide an overview of the HIT and data exchange capabilities among certain types of health and human service providers that are particularly important for older adults. A detailed review of HIT and data exchange landscape in other care settings in California is available in the [California Health and Human Services Agency's California Data Exchange Landscape Report](#).

## Hospitals

Four hundred twenty-eight general acute care hospitals and 125 acute psychiatric hospitals are licensed in California.<sup>42</sup> For older Californians, it is particularly important that hospitals can exchange data to facilitate care transitions for both incoming and outgoing patients. For example, hospitals need accurate, up-to-date information on the medications a patient is taking when they are admitted or arrive in an emergency room, and the patient's care team needs a summary of the care that was provided and any changes to medications when they are discharged.

With the support of several state and federal funding programs, acute care hospitals' HIT and data exchange capabilities have steadily increased over the past decade. Between 2012 and 2019, EHR adoption among acute care hospitals increased from 46% to 83%, and participation in a Health Information Organization (HIO) increased from 25% to almost 80%.<sup>43,44</sup>

However, while acute care hospitals' HIT and data exchange capabilities generally exceed those of other health and human services provider segments, there are still variations among hospital types and sizes. For instance, EHR adoption and HIO participation tend to be lower among California's smaller and rural acute care hospitals than among medium or large acute care hospitals.<sup>45</sup> Additionally, national surveys show that EHR adoption at psychiatric hospitals and long-term care facilities tends to be lower than at acute care hospitals.<sup>46,47,48</sup>

## Physician Organizations

California has approximately 75,000 licensed practicing physicians who deliver care in the state.<sup>49</sup> These physicians practice in a multitude of settings, practice sizes, and specialties, from independent solo practices to multispecialty clinics affiliated with health systems. Data exchange is a critical component of physicians' care for older adults, especially those with multiple complex conditions that routinely receive care from multiple specialists and human service providers. For example, when an older adult with dementia and diabetes seeks care from a neurologist, it is crucial that the neurologist has an accurate, up-to-date record of the individual's conditions and medications to avoid potential contraindications. Likewise, it is also critical for the individual's primary care physician to quickly receive a record of the care provided and medications prescribed by the neurologist.

Physician organizations have been eligible for state (Medi-Cal EHR Incentive Program and Cal-HOP) and federal (HITECH) incentive programs that have enhanced their HIT adoption and data exchange capabilities. While rates of EHR adoption tend to be lower among California's rural, independent physician practices, overall EHR adoption among California's physicians is high, with approximately 80% having adopted EHRs as of 2017.<sup>50</sup> Additionally, a 2020 survey of family medicine physicians found that 97% had adopted an EHR, suggesting adoption rates among physicians are continuing to climb.<sup>51</sup>

While publicly available data on California physician organization data exchange capabilities is limited, a survey of 12 HIOs in California found that 75%, 83%, and 58% of HIOs reported that hospital- or health system-owned physician practices and 58%, 75%, and 50% of independent physician practices or practice groups contribute data, view or receive data, or pay to participate, respectively.<sup>52</sup> Additionally, 89% of ambulatory providers who participated in Cal-HOP are capable of receiving event notifications from hospitals and can send and receive patient information lab results, medication lists, and other structured clinical documents from other provider EHRs and HIO.<sup>53,54</sup> Practices with ten or more providers, however, completed all three Cal-HOP milestones at slightly higher rates (90%) than practices with fewer than ten providers (86%).

### **Skilled Nursing Facilities and Nursing Homes**

California's 1,204 skilled nursing facilities (SNFs) and nursing homes generally care for individuals who require subacute care while recovering from an illness or a medical procedure (in the case of SNFs) or individuals who have long-term health needs that cannot be met in a community setting (in the case of nursing homes).<sup>55</sup> Data exchange is particularly important to support transitions of care between SNFs and nursing homes and other care settings (e.g., the hospital, physician offices, and community care providers) since it is critical that providers in the receiving setting have information on the care that was provided and the needs of the incoming patient.

Only 10% of surveyed SNFs in California reported that their EHR was fully interoperable with hospital EHRs, with 13% reporting partial interoperability, 60% reporting no interoperability, and 17% reporting not having an EHR.<sup>56</sup> Without interoperable EHRs, California's SNFs must resort to nonelectronic methods of receiving information about incoming patients. Many surveyed SNFs reported that they use phone conversations (71% of respondents), faxes (65% of respondents), or records physically brought in by the patient or a caregiver (65% of respondents) to obtain information from the discharging hospital.<sup>57</sup> California's SNFs and nursing homes are not well connected with data exchange organizations, such as HIOs, that facilitate the exchange of data across care settings. Specifically, 33%, 42%, and 17% of California HIOs reported that SNFs and nursing home providers contribute data, view or receive data, or pay to participate—rates that are lower than many other care settings.<sup>58</sup> Some research and anecdotal data from interviews also suggests that the workforce in SNFs and nursing facilities may be less tech-savvy than in other settings, as workers in these settings may not have had the same level of training and exposure to HIT as workers in other settings such as acute care hospitals.<sup>59</sup>

## Assisted Living Facilities

California's approximately 5,900 assisted living facilities provide a home for individuals who may need more help with activities of daily living than they would be able to obtain in the community but do not need the intensive care offered by a nursing home.<sup>60</sup> Like nursing homes and SNFs, HIT and data exchange play important roles during care transitions and care coordination in assisted living facilities. Many residents of assisted living facilities receive health and human services both from providers affiliated with their assisted living facility as well as other community providers. Coordination of these services is essential to avoiding duplication and potential contraindications.

Limited information exists on California assisted living facilities' HIT adoption and data exchange capabilities. A national survey of the 200 largest nonprofit assisted living facilities found that approximately 75% have adopted an EHR and remote safety monitoring technologies, such as user-activated emergency response or wander management systems.<sup>61</sup> Slightly over half have care management or case management and coordination systems (57%) or medication monitoring technologies (54%), and 20% have telehealth or remote patient monitoring capabilities.<sup>62</sup> It is important to note that these results may not reflect the HIT and data exchange capabilities of all assisted living facilities, particularly smaller ones which, like smaller organizations in other health care settings, may have less sophisticated capabilities.

## Human Service Organizations

Human service organizations provide a wide variety of services and supports to older Californians. Human services might include housing support, meal delivery services, and transportation support, among many others. It is often important for health and human services providers to exchange data. For example, it is valuable for a meal delivery service provider to have an up-to-date understanding of an individual's diagnoses and treatments to tailor their meals accordingly.

Limited quantitative data exist on the types and scale of human service data exchange or the capabilities of human service organizations to exchange data. One of the central challenges is that there are limited infrastructure and standards to support the exchange of human services data. This challenge is compounded by the fact that many human services providers lack the resources and technical sophistication to exchange data electronically with other human services providers or health care providers. Indeed, a 2022 survey of Medi-Cal managed care plans (MCPs) participating in CalAIM found that "the need to use standardized data sharing mechanisms and establish data sharing with non-traditional community support providers" were among the most common challenges cited by MCPs as they prepare for CalAIM.<sup>63</sup>

### *County In-Home Supportive Services Providers*

One type of human service organization for which there is qualitative data on their HIT and data exchange capabilities is County In-Home Supportive Services (IHSS) providers. IHSS providers provide services to over 620,000 Medi-Cal individuals who are blind or disabled, which enable these individuals to continue residing in the community, reducing the risk of institutionalization.<sup>64</sup> The types of services that can be authorized through IHSS are housecleaning, meal preparation, laundry, grocery shopping, personal care services, accompaniment to medical appointments, and protective supervision for the mentally impaired.<sup>65</sup> It is important for IHSS providers to be able to exchange data for supporting care coordination, both receiving information about the services the individual is receiving from other providers and sharing information about the services they are providing. IHSS providers also need to be able to share information with an individual's health care providers on status changes they observe.

The main IT system used by IHSS is the Case Management Information and Payrolling System (CMIPS), which is a statewide system with no county-level variability. CMIPS is primarily used to capture information from individuals' applications for IHSS, IHSS eligibility, in-home assessments to define IHSS needs, and ongoing capture of data as part of IHSS receipt.<sup>66</sup> However, CMIPS ability to capture social determinants of health (SDOH) or clinical data is limited, and while CMIPS interfaces with other state systems for administrative functions, it does not interface with EHRs.<sup>67</sup>

### **Data Exchange Organizations**

HIOs, community information exchanges (CIEs), and national networks serve as important intermediaries of data exchange, particularly between enterprises that are not able to easily exchange data through an EHR or other electronic mechanism.

HIOs are entities that facilitate the exchange of individuals' health information among enterprises in the health care delivery system. They can be community-based and nonprofit—known as “California HIOs”—or privately owned and operated—known as “enterprise HIOs.”<sup>68</sup> Limited information on the scope and capabilities of enterprise HIOs has been published; however, the history and capabilities of California's HIOs have been covered in numerous publications over the previous five years.<sup>69,70</sup> California's 15 HIOs play an important role in data exchange, sharing over 20 million patient encounter messages per month and operating in nearly all<sup>71</sup> counties in California.<sup>72</sup>

However, gaps remain in California's HIOs' reach and capabilities. Not all providers choose to participate in California's HIOs, and not all California's HIOs connect with one another, either through California Trusted Exchange Network (CTEN) or national networks.<sup>73</sup> These gaps or “white spaces” mean that it is not always possible for providers to easily exchange patient records, even if both connect to an HIO. Additionally, while HIOs are actively expanding their capabilities to exchange human services data, the capability to do so is not widespread.<sup>74</sup>

National networks (e.g., CommonWell Health Alliance,<sup>75</sup> DirectTrust,<sup>76</sup> eHealth Exchange<sup>77</sup>) and national data exchange frameworks (e.g., Carequality,<sup>78</sup> Trusted Exchange Framework and Common Agreement<sup>79</sup>) facilitate the exchange of data between provider organizations and health systems through common data-sharing agreements and standards, and are the conduits for a significant amount of data exchange in California.<sup>80,81</sup>

While national networks offer relatively comprehensive connections between providers, they have limitations related to the types of data they deliver and the format they deliver it in. Specifically, they do not deliver claims; additional clinical data such as real-time immunization, lab, and encounter data; or other increasingly important information related to SDOH (e.g., housing, food, and other social needs).<sup>82</sup> National networks also generally do not construct singular, longitudinal records for individuals across an individual's various providers, creating a potentially confusing amalgam of clinical summary documents from an individual's providers.<sup>83,84</sup>

CIEs are organizations that facilitate the exchange of human services information among a network of cross-sector partners.<sup>85</sup> CIE San Diego represents one of California's more established CIEs, with 124 health, government, and human service organizations participating as of December 2022 (including several older adult service organizations).<sup>86</sup> It curates individual longitudinal health and human service records based on data contributed by participating organizations as well as a resource database and closed-loop referral system to efficiently match individuals with the services they need and track referrals and follow-up.<sup>87</sup> North Coast Health Improvement and Information Network's (NCHIIN), a California HIO serving Humboldt County, North Coast Care Connect, is also in the early stages of establishing a CIE, currently focusing on referrals between health and human service providers.<sup>88</sup>

While CIEs are offering important data exchange services to the communities they serve, they are not yet widespread across the state, and questions remain about the sustainability of their business model.<sup>89</sup>



## V. EQUITY

Archstone Foundation intentionally interweaves justice, diversity, equity, and inclusion principles throughout all its work, including the Teams, Training, and Technology portfolios, and has made a commitment to focus an explicit share of its grantmaking on organizations serving diverse populations of older adults and working to reduce disparities in their outcomes.<sup>90</sup>

Race, income, place, and language are crucial factors correlated with disparities in health outcomes for older adults. People of color will make up a majority (55%) of California's older adult population by 2035, compared to 41% today. As has been demonstrated in numerous instances, disparities between Californians of color and white Californians exist in access to services and health outcomes.<sup>91,92</sup> Black/African American and biracial/multiracial respondents of the CA-LTSS<sup>93</sup> were among those most likely to report they need help with routine or personal care, 73.5% and 72.4%, respectively.<sup>94</sup> Another recent and poignant example of racial and ethnic disparities can be found in COVID-19 cases and deaths. COVID-19 disproportionately impacted older adults, and the percentage of COVID-19 cases and deaths among Latinx and African American Californians was higher than their respective shares of California's population.<sup>95</sup>

A similar dynamic can be observed with low-income Californians who, compared with Archstone Foundation intentionally interweaves justice, diversity, equity, and inclusion principles throughout all its work, including the Teams, Training, and Technology portfolios, and has made a commitment to focus an explicit share of its grantmaking on organizations serving diverse populations of older adults and working to reduce disparities in their outcomes.<sup>90</sup>

The disparities experienced by Californians living in rural locations compared to those living in urban locations intersect with many of the challenges experienced by lower-income and non-white Californians; however, access to health and human services can be particularly challenging for rural Californians since they may need to travel long distances if the services are not available in their communities. Rural residents disproportionately experience health issues (e.g., heart disease, cancer, unintentional injury, chronic lower respiratory disease) compared to urban and suburban residents.<sup>98</sup> According to a 2018 report by the Rural Health Research Gateway,<sup>99</sup> rural Medicaid beneficiaries aged 85 and older reported lower annual medical and dental visit rates and higher rates of outpatient visits and prescription medication use.

As noted above, connection to high-speed internet is increasingly important for older adults to access health and human services and to maintain connections with their communities. While high-speed internet adoption has increased dramatically among Californians, from 55% in 2008 to 91% in 2021, adoption lags among older adults (77%), households earning less than \$20,000 (70%), Californians who did not graduate from high school (63%), Spanish-speaking Latinxs (75%), and adults who identify as having a disability.<sup>100</sup> Additionally, according to data from the 2016 Health and Retirement Study, internet usage is significantly lower for older adults in suburban and rural residences, as well as for Black and Hispanic individuals. Furthermore, rural living reduced the probability of using the internet more for Black than White individuals.<sup>101</sup>

Similarly, there are disparities in EHR adoption and participation in data exchange between smaller and larger providers as well as between urban and rural providers. As mentioned above, EHR adoption, HIO participation, and engagement in all four of the Office of the National Coordinator (ONC) for HIT's domains of interoperability<sup>102</sup> tend to be lower among California's smaller acute care hospitals than medium or large acute care hospitals.<sup>103</sup> The same is true for rural acute care hospitals when compared to urban hospitals, except both participate in HIOs at similar rates (79% for rural hospitals and 77% for urban hospitals in 2019).<sup>104</sup> Likewise, EHR adoption tends to be lower among California's rural, independent physician practices. medication use.

Older adults are increasingly likely to experience chronic health conditions and need help with routine or personal care. It is important to consider disparities in the burden of disease and functional limitation, as well as the factors that contribute to disparities in access to services that allow Californians to achieve their optimal level of health and independence. Given the confluence of disparities that exist both between older adults and younger adults and among older adults of different demographic characteristics, as well as among different types of providers, Archstone Foundation will explicitly consider equity in all aspects of the funding opportunities listed below, advancing equity in the types of organizations that are eligible for funding and directing initiative funding to historically underserved populations, communities, and the health and human services providers who work in those communities.



# VI. POTENTIAL FUNDING OPPORTUNITIES FOR ARCHSTONE FOUNDATION

The following funding opportunity recommendations emerged from hypotheses that were developed and tested through research and input from stakeholders. They are organized into “Collaboration and Partnerships,” “Research and Evaluation,” and “Pilot Program” domains. Each domain includes principles that would apply to any activity in the domain, a set of topics that recommend the general areas or types of activities Archstone Foundation may consider funding in that domain, and, where applicable, examples of initiatives that could be funded.

Importantly, the three domains are intended to be mutually reinforcing. Collaboration and partnerships should be used to strengthen research and evaluation initiatives or pilot programs, and gaps and opportunities uncovered through research and evaluation initiatives can shape pilot programs that test solutions on the ground.

## **a. Collaboration and Partnerships**

Archstone Foundation should partner with philanthropies, state and county agencies, and others to leverage funding and expertise, identify promising programs and opportunities, and evaluate outcomes for their populations of focus.

### **General Principles of Collaboration and Partnerships:**

- There should be a compelling business case and aligned goals for partnerships Archstone Foundation would forge with the other organizations.
- Partnerships should provide opportunities for Archstone Foundation to broaden its reputation and name recognition.
- Partnerships should be complementary and should expand the scope and scale of available resources.
- Partnerships should embrace the framework of targeted universalism with respect to health equity, setting universal goals to improve the health and well-being of older adults and developing targeted strategies to address disparities in outcomes among older adults with different demographic characteristics.<sup>105</sup>
- Partners should have aligned values with Archstone Foundation and its constituents.

## Collaboration and Partnership Approaches

1. Archstone Foundation should partner with philanthropies, research institutions, and others to expand the scope and scale of projects and collectively vet projects through expertise that exists across partners. Examples might include:
  - Use forums such as the [California Aging & Disability Research Partnership](#), [Grantmakers in Health](#), or [Grantmakers in Aging](#) to develop concepts and strengthen existing or forge new funding relationships with other organizations that operate at the intersection of aging, health, and data exchange and technology.
  - Partner with groups that have an explicit focus on health equity or represent historically marginalized groups, such as [Justice in Aging](#), the [National Hispanic Council on Aging \(NHCOA\)](#), [National Indian Council on Aging \(NICOA\)](#), [SAGE](#), and others, to develop concepts and initiatives that address disparities.
  - Develop social impact investment partners to support technology and data exchange initiatives. Archstone Foundation could evaluate the efforts of other California-based philanthropies and organizations operating in this space, such as the [SF Tech Council](#),<sup>106</sup> formed through a partnership between the Metta Fund and the San Francisco Department of Disability and Aging, and explore participating in an existing partnership or forging a new partnership to focus on a new area. Archstone Foundation could also explore a partnership with the California Health Care Foundation (CHCF), for example, since CHCF has a rich history of funding initiatives related to data exchange, health equity, and older adults.<sup>107</sup>
  - Partner with universities that have schools, centers, or departments focusing on health and aging (e.g., USC Leonard Davis School of Gerontology, UCSF School of Nursing Institute for Health and Aging, and UC Davis Center for Health and Technology).
  - Partner with hardware manufacturers to supply technology hardware for potential pilot demonstrations.
2. Archstone Foundation should partner with California state and county agencies to support demonstrations, research, analysis, and evaluation of ongoing or soon-to-be-launched programs that focus on, or have implications for, older adults and technology or data exchange to advance cross-sector, team-based care.



## b. Research and Evaluation

Archstone Foundation should fund research and evaluations that quantify, better identify, and explain the data exchange and technology-enabled service gaps and resource needs to facilitate cross-sector, team-based care for older adults.

### Collaboration and Partnership Approaches

- Focus on HIT and data exchange activities that are being driven by state programs and policy.
- Identify opportunities and best practices that can be used to formulate California and national policies and programs.
- Promulgate findings by supporting convenings, webinars, press releases, and other activities.
- Leverage Archstone Foundation's role as a neutral convenor to bring stakeholders together and develop consensus around policy and program priorities.
- Seek out organizations and researchers that focus on historically marginalized populations and explicitly integrate and consider equity and health disparities into all research and evaluation design.

### Research and Evaluation Topics

1. **White papers and structured evaluations focusing on California policy and program priorities**, assessing care settings, provider types, or other aspects of care delivery that have limited technology-enabled services and human resource capabilities needed to support data exchange. These white papers and evaluations would be an opportunity for Archstone Foundation to build on its experience supporting the development of the State Health Information Guidance (SHIG) Volume 2.0, focusing on the sharing of health and social services information to support the coordination of treatment/care and services related to food and nutrition insecurity, and Volume 3.0, focusing on the sharing of HIV/AIDS information.<sup>108</sup> Examples might include:
  - Research and evaluations that identify the data exchange and technology resource needs to facilitate participation in **California's Data Exchange Framework** among health and human service providers that play a prominent role in the care for older adults. This research might focus on the needs of SNFs, which are required to participate in the framework, and community-based human service providers, which are encouraged but not required to participate. The research may also include policy options for state policymakers to consider in addressing the gaps and tactical guidance for the included types of organizations participating in the framework. Archstone Foundation should solicit input from, or partner with, CalHHS Center for Data Insights and Innovation (CDII) for any research concerning the Data Exchange Framework.

- Research and evaluations that identify the data exchange and technology resource needs to support **CalAIM's institutional, long-term care carve-in**, under which Medi-Cal MCPs will cover and coordinate Medi-Cal institutional, long-term care in all counties in 2023. This research might focus on the data exchange and HIT needs of health and human service providers that will need to exchange information and coordinate services with other providers in MCP networks. It may include policy options for the state DHCS to establish an incentive program to address any identified gaps and support the carve-in. Archstone Foundation should solicit input from, or partner with, DHCS for any research concerning CalAIM.
- Research and evaluations that better describe the characteristics and needs of the **latest Medi-Cal expansion group**, which consists of 286,000 undocumented Californians who are aged 50 or older, and how technology and data exchange initiatives may be deployed to support team-based care and services.<sup>109</sup>
- Research and evaluations that identify the data exchange and technology resource needs to support **DHCS' Multipurpose Senior Services Program (MSSP)**, which provides home and community-based services (HCBS) to Medi-Cal-eligible individuals who are 65 years or older and disabled, as an alternative to nursing facility placement.<sup>110</sup> This research might focus on the data exchange and HIT needs of the health and human services providers to better coordinate services covered under the program and may include policy options for DHCS to consider and guidance for participating providers. Archstone Foundation should solicit input from, or partner with, DHCS for any research that focuses on the MSSP.
- Research and evaluations that better describe the current technology and data exchange capabilities of California's **Aging and Disability Resource Connection (ADRC) providers, Community-Based Adult Services (CBAS), Program of All-Inclusive Care for the Elderly (PACE), MSSP sites**, and other settings that play an important role in the provision of health and human services to older adults but for which there is limited statewide data on how technology and data exchange are being deployed to support team-based care. The research might also include opportunities to advance the technology and data exchange capabilities at these sites to better support cross-sector coordination and team-based care. Archstone's research might explore how the California Department of Aging's (CDA) Customers Holistic Aging Relationship Management (CHARM) system<sup>111</sup> could be used to facilitate data exchange among ADRCs, community-based organizations (CBOs), and providers.



2. Gaps and opportunities to sharing information and supporting referrals with human service organizations (e.g., medically tailored meals, housing supports, transportation, and other services). Examples might include:
  - Research that better describes the current capabilities and market landscape of **closed-loop referral network platforms**, which support health care providers in referring patients to CBOs for human services and tracking and managing follow-up. This research could explore how well these tools are working for older adults and the caregivers who serve them and how well these tools integrate with one another or with other HIT, such as EHRs. Interviewees noted that there are multiple closed-loop referral platform vendors, and the extent to which they integrate varies. This research should also include potential statewide solutions, which might include better integrating closed-loop referral networks into HIOs, as at least one California HIO and some other states have done.<sup>112,113,114</sup>
  - Research and policy options for how California may be able to **deploy a “Lead Entity”** model to coordinate investments in as well as training and technical assistance (TA) with networks of human service providers. Lead Entities typically serve as the hub to contract and coordinate services for a network of CBOs. As human service CBOs are increasingly being called upon to coordinate, deliver, and bill for services in health care programs, such as through CalAIM’s Enhanced Care Management and Community Supports programs, it will be important to understand whether and how Lead Entities can support CBOs that provide services and supports to older adults and their caregivers in contracting with health plans to facilitate their participation in these health programs. One aspect of the assistance provided by a Lead Entity may be supporting CBOs to advance their information technology and data exchange capabilities. For example, there may be opportunities to standardize technologies and data exchange processes across CBOs to enable them to more seamlessly work with health care providers and plans.
3. Demographic information (e.g., geography, race, ethnicity, sexual orientation, gender identity) that informs a better understanding of older adults’ needs and where targeted interventions may be most effective. Examples might include:
  - Research that describes the potential **barriers to implementing improved demographic data standards**, such as United States Core Data for Interoperability (USCDI) version 2,<sup>115</sup> among health and human service providers who care for older adults. This research may focus on providers participating in the Data Exchange Framework since it requires the adoption of USCDI version 2.

4. Approaches to engaging older adults, caregivers, and the workforce providing services to older adults through technology. Examples might include:

- White papers that identify opportunities to address the current gaps in **data and digital literacy among older adults and the workforce who cares for them**. These white papers could build on research conducted by the [National Digital Inclusion Alliance](#), [California Emerging Technology Fund](#), and others to evaluate approaches that have been used to advance digital literacy, such as digital navigator programs that offer support to older adults and their families and caregivers in understanding how to use critical technologies and which types of technologies they need, and virtual technology trainings and TA for the workforce. Based on the findings of the evaluation, Archstone Foundation could develop guidance and policy options on which approaches are most appropriate and under which circumstances in California.
- Research that explores the **ability of older adults and their caregivers to electronically access and provide input on their health and human service records**. Such research may explore potential barriers to accessing patient information today, which components would be most useful to access, and options to make those components more accessible. Access to medication lists, for example, may be particularly useful to older adults and their caregivers. Older adults often take multiple medications prescribed by different providers, presenting challenges in safely managing medications, even for providers who use EHRs or other medication management tools. Almost 10,000 people die from medication errors, and hundreds of thousands more experience medication errors in the United States each year, leading to an estimated annual cost of \$40 billion.<sup>116</sup> Simply providing patients and their caregivers with the ability to view and better understand complete medication lists helps reconcile and prevent potential medication errors.<sup>117</sup>
- Research that describes the current state of technology adoption and data exchange for care **models and approaches designed to allow older adults to receive care in their homes**. This research may focus on the technology that is being used to support “hospital-at-home” programs that enable patients to receive acute care in their home environment and have proliferated nationally and in California.<sup>118</sup> While there is evidence that hospital-at-home programs can improve outcomes and reduce costs, little is known about the technologies that are being used to support care coordination and delivery in these programs and the extent to which these technologies are interoperable with EHR and other data exchange platforms and services.<sup>119,120,121</sup>

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### c. Pilot Programs

Archstone Foundation should fund programs that test technology-enabled services and data exchange interventions that improve team-based care and better integrate and coordinate care across health and human services providers. Pilot programs test new ways of organizing and using people, processes, and technologies on a limited scale which, through evaluations, inform whether and how the program should be expanded.

## THE POWER OF PILOT PROGRAMS: *Physician Orders for Life-Sustaining Treatment*

In 1991, a group of medical ethicists and physicians in Oregon set out to improve the way patient preferences for end-of-life care were being captured. Through pilot programs and evaluations, they ultimately developed a physician orders for life-sustaining treatment (POLST) form, which, over time, has become the national standard for documenting patients' wishes.<sup>122</sup>

Over the past six years in California, there has been a movement to create an electronic registry of POLST forms called the POLST eRegistry. These efforts began with the CHCF's POLST eRegistry Pilot in 2016, and through continued support from CHCF and other organizations, including Archstone Foundation, a law ([AB 133](#)) was ultimately enacted to establish a statewide ePOLST Registry.<sup>123</sup>

### General Principles of Pilot Programs

- Initiatives should have demonstrated proof of concept and have the potential to be scalable, spreadable, and sustainable.
- Programs should, wherever possible, align with state initiatives to capitalize on the regulatory and policy "tailwinds" and maximize the reach and impacts of their investments.
- Pilots should include training and TA components to help people use and integrate new technologies into their workflows and daily lives.
- Whenever possible, Archstone Foundation should find partners, such as hardware manufacturers, internet service providers, government agencies, philanthropies, and other resources to fund hardware (where necessary), allowing Archstone Foundation to focus investment on content, process, TA, and change management interventions.
- Explicitly integrate and consider equity and health disparities in all pilot design and implementation, ensuring that the organizations charged with implementing pilot programs have deep and sincere connections with the communities and settings the pilot will be deployed in.

## Potential Pilot Programs

1. Pilot programs that deploy technology-enabled services, training, TA, and content **to support diversion and discharge from institutional settings in lieu of care being delivered in the home**, which is the overwhelming preference of older adults.<sup>124</sup>

Examples may include:

- Pilots that test technology-enabled services, training, TA, and content exchange to facilitate human service CBOs' participation in initiatives and programs designed to appropriately deliver care in the home (e.g., hospital-at-home care models, CalAIM's institutional, long-term care carve-in, DHCS' MSSP, CDA's Healthier Homes Aging in Place Program<sup>125</sup>). These pilots may focus on using technology to extend the reach of the services provided by CBOs (e.g., technology that allows older adults to virtually maintain connections in the community and combat social isolation), as well as providing training and TA to CBOs and older adults on using these technologies.
2. Pilot programs that seek to **improve data exchange** between social and human service organizations and health care organizations that care for older adults, both of which, as discussed above, have historically had limited data exchange capabilities. Examples might include:
    - Pilots that stand up a CIE to improve the exchange of health and human services data among cross-sector care teams in a historically under-resourced community that is not served by a CIE. As noted earlier, CIEs have shown promise in facilitating the exchange of human services data in the places in which they are operational in California, but their footprint remains limited. The services provided by a CIE may be especially helpful for older adults in under-resourced communities since they typically face elevated levels of disease burden compared with younger adults or older adults in more affluent communities, and therefore may require coordination across a larger team of health and human services providers.<sup>126</sup> These pilots could represent a long-term investment by Archstone Foundation, and potentially other partners, to improve cross-sector coordination in a community in need. Archstone may consider approaching CDII and DHCS to coordinate efforts to stand up a CIE.



## VII. PRIORITIZING POTENTIAL FUNDING OPPORTUNITIES

Archstone Foundation will need to carefully consider and select a portfolio of funding opportunities that have the maximal alignment with its mission, and potential impact and fit within the Foundation's available resources. Doing so will likely mean that Archstone Foundation initially focuses on a subset of the opportunities identified above before either expanding its involvement in certain opportunities or moving on to new opportunities. In selecting opportunities to prioritize, Archstone Foundation should focus on opportunities that advance equity, generate publishable findings, and focus on major time-limited federal or state initiatives.

As discussed in Section V. Equity, addressing disparities is a foundational part of Archstone Foundation's mission. This means that Archstone Foundation should evaluate all potential opportunities through the lens of health equity, prioritizing projects for settings, providers, caregivers, and older adults with the fewest resources and where disparities in outcomes, technology adoption, or data exchange capabilities are greatest.

Prioritizing the development of white papers and structured evaluations focusing on California policy and program priorities may be particularly fruitful in the near term. California policy and program priorities have the advantage of saliency since state and local policymakers, as well as stakeholders, are focused on the issue. This interest is likely to provide additional opportunities to form or deepen partnerships with the state agencies in charge of implementing the programs or with other foundations to better target and further extend resources deployed to any initiative. The saliency of state priorities is also likely to expand the readership and real-world impact of any publications that Archstone Foundation generates, adding brightness to the light such work shines on disparities in technology and data exchange capabilities among certain segments of providers who are crucial to these programs, particularly those outside the traditional health care delivery system. Taken together, prioritizing white papers and structured evaluations that focus on California programs and priorities may provide Archstone Foundation with a significant opportunity to maximize the impact of its funding, identify and address inequities, and further cement its reputation as a leader at the intersection of policy, data exchange, and older adults in California.

Archstone may also consider prioritizing pilot programs that focus on improving data exchange among organizations that provide services to older adults that have traditionally been outside the health care delivery system. This could potentially begin with efforts to establish a CIE community or other initiatives to better integrate health and human services providers in under-resourced communities. Once again, publishing findings from pilot programs will be a critical step in building momentum to expand successful programs more broadly.



# VIII. POTENTIAL FUNDING PITFALLS

As Archstone Foundation pursues these and other initiatives to improve team-based care for older adults, there are several potential challenges to be mindful of.

**Change Management.** Introducing new technologies or care models as part of a pilot initiative or program can be disruptive to existing workflows and may therefore face resistance. To improve the likelihood that new technology or care models will be successfully implemented, maintained, and expanded, it is critical to have a full understanding of the status quo in the settings in which the intervention is being deployed and have a change management plan.

It is also important to consider factors external to the immediate setting of the intervention, which may modulate the reaction to the intervention and the time needed for implementation. The COVID-19 pandemic, for example, created a set of conditions that greatly increased the utilization of telehealth and other digital health technologies. Changes in policy, such as the funding that was made available for EHR implementation through the HITECH Act, encouraged the rapid uptake of EHRs among eligible providers. Finally, disruptive innovations can quickly change long-standing business models, such as the way ride-sharing apps changed the taxi industry or the way short-term vacation rental services changed the hotel industry.

**Workforce.** When designing an intervention to test technology-enabled programs, services, or care models, the capabilities and impact on the workforce must be kept in mind. Poor data and technology literacy among health care workers has been found to be one of the most common barriers to the digital transformation of health care.<sup>127</sup> Data and technology literacy shortcomings have been found to be especially prevalent among frontline workers who care for older adults, due to insufficient training, high staff turnover, and other factors.<sup>128,129</sup> Additionally, nursing facilities, assisted living facilities, home care agencies, and other organizations that care for older adults are experiencing staffing shortages that may limit their bandwidth to implement cutting-edge interventions.<sup>130,131</sup> However, evidence also suggests that it is possible to overcome these challenges with good training and change management strategies.<sup>132</sup> Taken together, limitations in data and technology literacy and staffing shortages further emphasize the need for training to be a significant component of any technology-enabled program, service, or care model.



**Broadband Adoption.** As noted above, access to high-speed internet is not yet ubiquitous in California, particularly among older adults, rural settings, and organizations that care for older adults.<sup>133,134</sup> This means that interventions and initiatives that require access to high-speed internet may require additional supports to be successfully implemented.

**Unproven Initiatives, Services, and Technologies.** There are many exciting and innovative technology and data exchange solutions to improve care for older adults being developed by startups and established companies alike. While some of these solutions may go on to be widely adopted, the reality of the process of innovation means that many will fail to gain traction or be challenging to sustain and scale. This is why funding unproven solutions should be done with the utmost caution and balanced with investments in solutions that have demonstrated efficacy.

**Remote Patient Monitoring Technologies.** Use of remote patient monitoring technologies, including sensors, wearables, and other devices that allow providers or caregivers to remotely track an individual's health conditions or symptoms, has increased substantially in the past few years. According to one analysis of nearly 20 million commercially insured and Medicare Advantage enrollees, billing for remote patient monitoring increased more than fourfold between January 2019 and March 2021, with the highest rate of increase occurring after the onset of the COVID-19 pandemic.

By design, remote patient monitoring technologies generate a stream of data about a particular condition that needs to be incorporated into an EHR or otherwise easily accessible to and exchangeable between providers and caregivers in order to fulfill their promise. While many more established remote patient monitoring technologies are designed to integrate with EHRs, many earlier-stage technologies do not, creating another data stream that can be challenging to incorporate into workflows. Even for the remote patient monitoring technologies that do integrate with EHRs, as discussed above, many settings and providers that care for older adults may not have sophisticated EHRs or capabilities to electronically exchange foundational health and human service data (e.g., lab results, vital signs, medication information, housing, and other types of information) with other members of the care team.<sup>135</sup>

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Without the basic data exchange infrastructure in place, it will be difficult to systematically incorporate the data generated by remote patient monitoring technologies as new technologies are introduced with their own interfaces and processes for exchanging data. It is therefore important for Archstone Foundation to focus on addressing the gaps in basic data exchange that will provide the foundation to incorporate data generated by point solutions such as remote patient monitoring technologies.

**Cost, Complexity, and Business Case for Interoperable Data Exchange.** The cost and complexity of implementing the technologies, tools, and systems needed for interoperable data exchange have meant that the promise of better data exchange alone is not always a compelling enough business rationale to drive actual exchange. EHR interfaces, which are foundational to electronic data exchange, are expensive to implement and maintain, and not all organizations have the resources to cover the costs or the technical expertise to configure. Additionally, the vast quantity of different types of health and human services information that need to be structured, coded, stored, and then shared in a way that can be integrated into completely different systems is far more complex than, for example, a basic banking transaction that just requires three things—an amount to be transacted, an account number, and a routing number.

The challenges of cost and complexity of data exchange are compounded by the fact that, in many instances, the value and benefit of exchange (most directly the patient and payers) do not necessarily accrue to the entity that makes the investment or shares in the cost (often health systems and provider organizations). And the users who are being asked to use HIOs, CIEs, closed-loop referral networks, or other platforms are not sufficiently compensated for the time it takes to use those systems that often have workflows outside of their EHRs.

This confluence of factors has, in part, contributed to competition among HIT vendors and health systems, serving as a barrier to interoperability and data exchange. Many EHRs, especially earlier versions, were not designed to easily exchange data with EHR models made by other vendors. Health systems have sometimes been reluctant to freely share patient data with other health systems, viewing such data as a proprietary asset while also citing legitimate concerns about data privacy and security.<sup>136</sup>

In recent years, however, a few key policy developments have pushed for greater interoperability and data sharing. ONC's Information Blocking Final Rule bars HIT vendors, health care providers, and HIEs and networks from engaging in practices that are likely to interfere with the access, exchange, or use of electronic health information, except as required by law or specified in an information blocking exception.<sup>137</sup> ONC has also used its power to certify HIT to establish the USCDI, which defines a minimum or default set of data categories that HIT users should expect to be able to exchange between systems.<sup>138</sup> Further, some states, such as Maryland, have sought to reinforce the business rationale for data exchange through enforceable mandates and other policies to expand data sharing.<sup>139</sup>

None of these potential challenges are meant to suggest that Archstone Foundation should reconsider its commitment to collaboration and partnerships, research and evaluation, and pilot programs that seek to improve cross-sector, team-based care for older adults. Instead, they represent aspects of all such programs and initiatives that should be planned for at the outset.

## IX. CONCLUSION

The landscape of data exchange in California presents significant opportunities for Archstone Foundation to deploy investments that advance cross-sector, team-based care for older adults. By strategically collaborating and forming partnerships, Archstone Foundation can more thoroughly vet and expand available resources to support research and evaluation initiatives and pilot programs. Archstone Foundation's investments in pilot programs can pave the way for technology and data exchange to support new care models that in turn pave the way for better outcomes and more collaborative care for older adults. Through investments in research and evaluation initiatives, Archstone Foundation can elevate key gaps in the data exchange landscape as it relates to older adults and identify opportunities to address those gaps, all the while publicizing findings from both pilots and research to broaden their impact. Most importantly, by explicitly considering equity in all grantmaking activities, Archstone Foundation can lend its hand in addressing the health disparities that have plagued older Californians for too long.

As Archstone Foundation continues on its journey to support data exchange and technology that enables better care for older adults, it should consider the optimal mix of the funding opportunities described above and maintain a willingness to pivot based on changes in the policy, regulatory, and business landscape.



# X. APPENDICES

## a. Funding Hypotheses

1. Archstone Foundation should **invest in and test novel and innovative programs, technologies, services, and care models** designed to improve outcomes for older adults and publish their results to demonstrate the value of adopting and spreading innovations in the market.
2. Archstone Foundation should prioritize funding programs, technologies, services, and care models designed for older adults in health and human services organizations and across care settings where there are significant **gaps in philanthropic funding** to bring more attention to the need to innovate and redesign care in those settings.
3. Archstone Foundation should apply an **equity lens** to all programs, technologies, and services it funds, including considerations to direct initiative funding toward historically underserved populations, communities, and the health and human services providers who work in those communities, to ensure that resources are directed to those most in need.
4. Archstone Foundation should **collaborate with other organizations** to identify pilots, technologies, and programs to improve outcomes for target populations to better leverage funding.
5. Archstone Foundation should (1) **fund and publish policy white papers, recommendations, and guidance** that address identified gaps; and (2) **serve as a neutral convener of stakeholders** to coordinate deployment of investments and development of policy recommendations and guidance to further solidify its position as a critical leader in **establishing state HIT/HIE policy priorities** for older adults.
6. Archstone Foundation should align its strategy for investing in HIT/HIE pilots, technologies, and programs with ongoing or soon-to-be-launched state initiatives to capitalize on the **regulatory and policy “tailwinds”** to maximize the reach and impacts of its investments.



## b. Interview Participants

NAME	TITLE	ORGANIZATION
Mark Beckley	Chief Deputy Director	California Department of Aging (CDA)
Melissa Buckley	Director, Innovation Fund	California Health Care Foundation (CHCF)
Sophia Chang	(Formerly) Chief Clinical Informatics Officer	Clover Health
Anastasia Dodson	Deputy Director, Office of Medicare Innovation and Integration	California Department of Health Care Services (DHCS)
Lisa Gibbs	Geriatrician	UC Irvine
Karis Grounds	Vice President of Health and Community Impact	San Diego 211
Eric Hazzard	Director, Network Development (West Coast)	Unite Us
Kathy Kim	Principal, Consumer Health Informatics and Health Science; Adj. Assoc. Professor	MITRE; UC Davis
Rishi Manchanda	CEO, Physician	HealthBegins
Terri Shaw	Consultant	California Department of Aging (CDA)
June Simmons	President & CEO	Partners in Care Foundation
Kevin Thomas	Physician	Primary Care Practice



## c. Workshop Participants

### Workshop 1 Participants—September 22, 2022

NAME	TITLE	ORGANIZATION
Susan Belgrade	Senior Director, Multipurpose & Senior Centers	Jewish Family Service of LA
Gio Corzo	Vice President, Home & Care Services	Meals on Wheels Orange County
Becky Duffy	Executive Director	CA Association of Adult Day Services
Linda Healy	Vice President, Chief Innovation Officer	Motion Picture & Television Fund
Victoria Jump	Director	Ventura County Area Agency on Aging
Ben Lui	Chief Medical Officer	On Lok
Becky Villano	Senior Consultant, Grants and Fund Development	Alzheimer's Family Center

### Workshop 2 Participants—November 1, 2022

NAME	TITLE	ORGANIZATION
Gio Corzo	Vice President, Home & Care Services	Meals on Wheels Orange County
Becky Duffy	Executive Director	CA Association of Adult Day Services
Lisa Gibbs	Chief, Division of Geriatrics and Gerontology, Family Medicine School of Medicine	University of California, Irvine
Kami Griffiths	Executive Director	Community Tech Network
Linda Healy	Vice President, Chief Innovation Officer	Motion Picture & Television Fund
Victoria Jump	Director	Ventura County Area Agency on Aging
Cindy Kauffan	Deputy Director	SF Human Services Agency Department of Disability and Aging Services
Ben Lui	Chief Medical Officer	On Lok
Rishi Manchanda	CEO	Health Begins
Terri Shaw	Independent Consultant	Self Employed
Becky Villano	Senior Consultant, Grants and Fund Development	Alzheimer's Family Center



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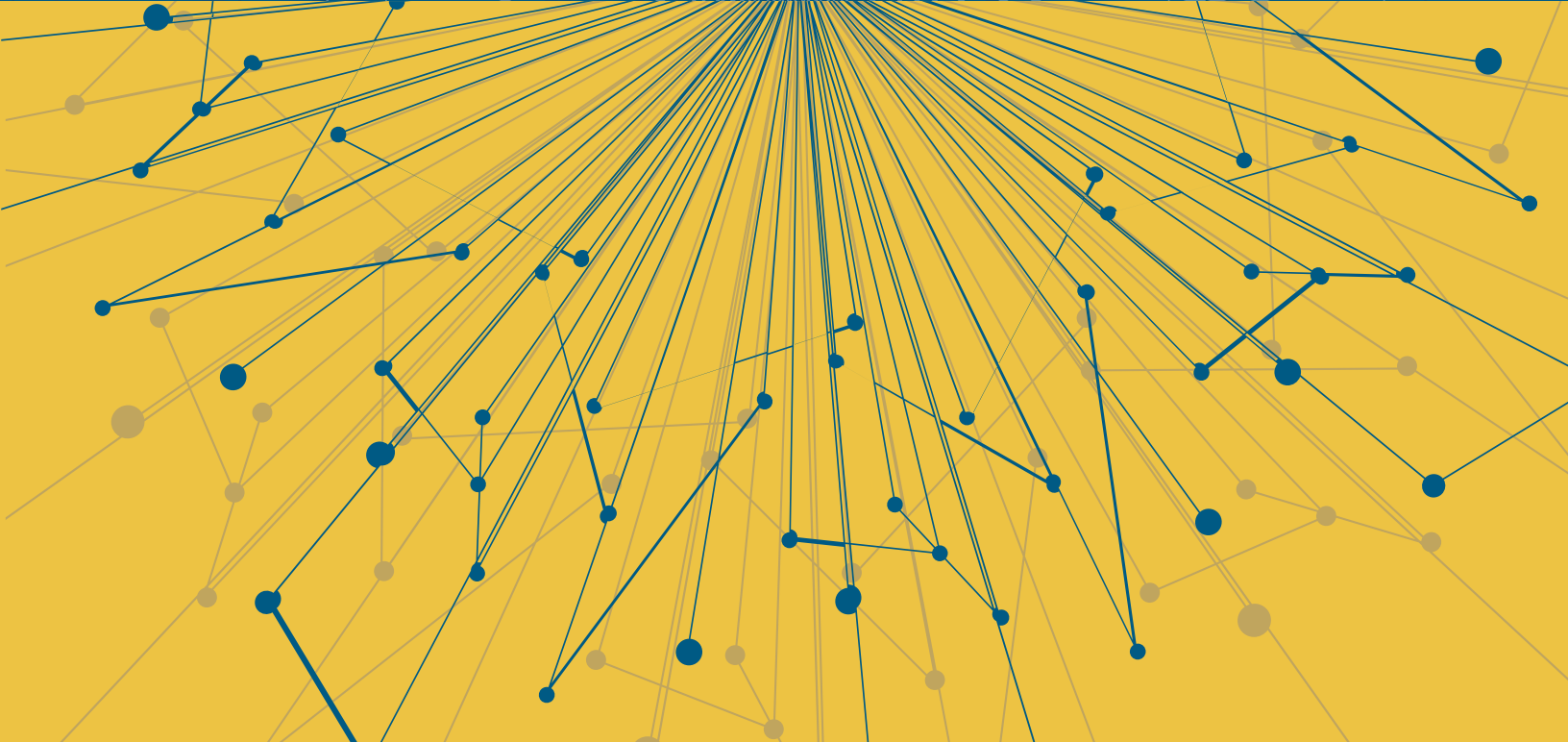
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This paper was authored by Jonah Frohlich, Senior Managing Director, Jonathan DiBello, Manager, and Sol Lee, Consultant, at Manatt Health. Manatt Health integrates legal and consulting services to better meet the complex needs of clients across the health care system. Combining legal excellence, firsthand experience in shaping public policy, sophisticated strategy insight and deep analytic capabilities, we provide uniquely valuable professional services to the full range of health industry players. Our diverse team of more than 180 attorneys and consultants from Manatt, Phelps & Phillips, LLP, and its consulting subsidiary, Manatt Health Strategies, LLC, is passionate about helping our clients advance their business interests, fulfill their missions and lead health care into the future. For more information, visit <https://www.manatt.com/Health>.



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