Reimagining Nursing Home Care

Building communities that support resident and staff wellbeing

Ariadne Labs Eldercare Options Document
Version 1.0, Fall 2020

Foreword

Large scale disasters expose existing structural problems in our systems by magnifying and exacerbating them; in the case of COVID-19, the magnification manifested in widespread loss of life for nursing home residents and staff. This outcome was a result of cracks, problems, and challenges that nursing homes were already facing - long standing difficulties with infection control, understaffing, the hierarchical construction of nursing homes, nursing home funding, etc. These problems were always affecting the most vulnerable populations in nursing homes - frontline staff and residents - with the effects grossly magnified at the onset and throughout the duration of the pandemic.

Nursing homes have long held a negative public perception, summarized succinctly as places where no one wants to live, and no one wants to work. Even in this incredibly dark moment, where nursing homes have been hit hardest by COVID-19, we know that this is not true. Throughout our interviews, focus groups, and discussions with experts, we consistently heard about bright spots. Some of these bright spots were relationships, like the connections between the personal care aide and the resident; some were simple communication tools for staff that supported a culture of safety and transparency amidst the chaos of ever changing protocols. We want to highlight these bright spots, explore them in greater depth, understand their strengths and successes, and then scale them across the industry.

How did they do it? What can we learn from them so that we can change the experience for both staff and residents alike of nursing homes, and thereby improve outcomes? We are using COVID-19 as an opportunity to address underlying structural problems in our system of care. We believe this will improve the system's resiliency and reaction time in this and future pandemics. Our goal is to change the narrative and change the work and culture inside the nursing home, so that nursing homes are places we want to live, and places we want to work. This document acts as an outline of where we are now, how we got there, and provides a few potential avenues towards paradigm-shifts and systems level solutions.

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Background

Elderly individuals have suffered disproportionately from the COVID-19 pandemic. While adults over the age of 65 comprise only 15.6% of the US population, they account for more than 80% of COVID-related deaths.[1] In spite of this, not all elderly individuals are at equal risk from this pandemic. Disparities in rates of infection and mortality exist based on geographic location, race, socioeconomic status, gender, ability status, and living arrangements. In our background, we'll explore the various, seemingly disconnected factors to understand the landscape in which COVID wreaked havoc.

Who are older adults?

Older adults are people who are 65 and older. As of 2016, they numbered 49.2 million, 15.2% of the total population[2] of the United States. Older adults are at higher risk for many health and social issues, as they are a marginalized group that suffer from social determinants, housing instability, food insecurity, chronic disease, etc. As such, we started with a deep dive into the primary needs of older adults. These primary needs for older adults are predominantly social and medical, with social factors strongly impacting health outcomes. These needs include: (1) the need to alleviate social isolation, which has been tied to increased mortality; (2) the need for chronic medical care, of which many older adults require; (3) the need for improved understanding of cognitive decline, associated with increased risk of elder self-neglect and abuse; (4) the need to address housing inequality in older adults as it is linked with health outcomes, and (5) a need to address food insecurity along with unstable housing, chronic disease management, low socio-economic status, limited mobility, and social isolation.

With the eruption of COVID-19, however, there are a few additions to the above. First, over 40% of COVID-19 deaths have occurred in nursing homes. Various comorbidities and complex health conditions place older adults at higher risk for COVID-19, indicating a need for better chronic care for comorbidities and infectious disease control at vulnerable sites with older populations, predominantly nursing homes.

Comorbidities present a risk factor for more serious infection and higher rates of mortality in individuals exposed to COVID.[3] Comorbidities are incredibly common among the elderly – an estimated 80% of older adults have at least one chronic health condition,[4] and among Medicare beneficiaries, 68% have two or more.[5] The most common chronic conditions

[1] CDC. "Coronavirus Disease 2019 (COVID-19)." Centers for Disease Control and Prevention, February 11, 2020. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/older-adults.html.
[2] https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2017OlderAmericansProfile.pdf
[3] Wiemers, E. E., Abrahams, S., AlFakhri, M., Hotz, V. J., Schoeni, R. F., & Seltzer, J. A. (2020). *Disparities in Vulnerability to Severe Complications from COVID-19 in the United States* (No. w27294). National Bureau of Economic Research.
[4] Centers forDisease Control and Prevention. Healthy Aging at a Glance 2011. http://stacks.cdc.gov/view/cdc/22022
[5] Chronic Conditions Charts: 2015. Baltimore, MD: Centers for Medicare & Medicaid Services. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ChronicConditions/Chartbook_Charts.html.

affecting older adults include hypertension, high cholesterol, vascular disease, and diabetes.[6] Individuals who suffer from these conditions are more likely to become symptomatic with COVID, to require hospitalization, to be admitted to the ICU, and to ultimately die from the infection.

For more detail, literature, and references on primary needs, look here.

Race, socioeconomic status, and gender

Evidence demonstrates that COVID-19 is widening existing health disparities between racial and socioeconomic groups across age groups, including the elderly. Racial and ethnic minorities, who make up 23% of the elderly population, are at increased risk of exposure and death from COVID-19, the result of compounding environmental, systemic, historical and social factors. They have significantly higher rates of medical comorbidities, due to these environmental, systemic, historical and social factors, which places them at a higher risk of falling seriously ill from COVID[7].

Socioeconomic status also impacts COVID risk in older adults. Almost 7% of elderly individuals fall below the poverty line, and roughly the same percent of elders experience food insecurity. Rates of poverty are even higher in racial minorities and less educated households[8]. Lower SES is a risk factor for COVID, likely due to higher rates of comorbidities among lower SES individuals[9] as a result of inability to social distance, being employed in essential worker roles, needing to take public transportation, having jobs without coverage or paid furloughs to protect employees, and other systemic socioeconomic factors such as living in homes with more people and/or more people who fall into the previous categories, because a large proportion of older adults are not working.

Finally, gender may play a role in risk of COVID among the elderly. In all age groups, evidence points towards increased risk of infection, ICU admission, and mortality in men. Aggregated data from eight different countries suggests that the gender gap in COVID-related ICU admissions increases with age[10], with more data needed to determine why this gap exists.

We understand that being inundated with data that displays the reality of structural violence older adults face, especially for those of similarly marginalized groups, can be triggering. For more data on racial disparities in COVID among older adults, we recommend reading this report and looking at this tracker; especially for individuals further removed from the crisis,

[6] National Center for Health Statistics. Health, United States, 2016: With Chartbook on Long-term Trends in Health. Hyattsville, MD. 2017.
[7] Nania, Rachel. "Higher COVID-19 Incidence in Minority Communities." AARP. Accessed July 27, 2020. http://www.aarp.org/health/conditions-treatments/info-2020/minority-communities-covid-19.html.
[8] Times, The New York. "More Than 40% of U.S. Coronavirus Deaths Are Linked to Nursing Homes." *The New York Times*, June 27, 2020, sec. U.S. https://www.nytimes.com/interactive/2020/us/coronavirus-nursing-homes.html.
[9] Wiemers, E. E., Abrahams, S., AlFakhri, M., Hotz, V. J., Schoeni, R. F., & Seltzer, J. A. (2020). *Disparities in Vulnerability to Severe Complications from COVID-19 in the United States* (No. w27294). National Bureau of Economic Research.
[10] Bee, A., & Mitchell, J. (2017, January). Do older Americans have more income than we think?. In *Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association* (Vol. 110, pp. 1-85). National Tax Association.

we recommend looking at the data to better understand the full scope of the pandemic for marginalized populations.

Geographic distribution and living arrangements

Older individuals are heavily concentrated in the most populous areas of the US. Roughly 9 out of every 10 older adults live in urban areas, and the 10 most populous states contain more than 50% of the US elderly population.[11] These states unsurprisingly represent some of the highest COVID case counts in the country. Within the elderly populations of these states, a large proportion of COVID cases occur in long-term care facilities (LTCs), such as nursing homes, where a high number of older adults cohabitate in close quarters.

Roughly 3% of individuals 65 and older reside in LTCs, with the majority of the remaining population living in the community, either alone or with a spouse.[12] However, one's risk of requiring institutional care increases with age – nearly 10% of those aged 85 and above live in an LTC, comprising almost half of all LTC residents. In addition, rates of LTC living in the elderly population are higher among those who are women, and those with disabilities[13,14]

COVID-19, Older Adults, and Long Term Care Facilities

The most vulnerable older adults live in long term care facilities, and the more than 2.1 million[15] people living in nursing homes[16] and residential care communities[17] in the United States have emerged as a group hit particularly hard by the pandemic. As of September 13, there have been over 55,845 COVID-19 deaths in these long-term care facilities,[18] accounting for about 42% of virus-related deaths nationwide.[19] In addition, the structure and organization of nursing homes cause them to be hotspots for infection and preventable deaths.

Health Insurance Coverage

Long-term care (LTC) insurance is not widespread, covering only about 11% of elderly adults. The wealthy are more likely to have private coverage, although their coverage rates are still not particularly high; as of 2014, among seniors with at least $1 million dollars in household wealth, 25% had LTC insurance, while among those with $100,000 to $500,000 in household wealth, 8% had LTC insurance.[20] In addition, the LTC insurance market is shrinking, with 372,000 new policies sold in 2004, compared to under 70,000 policies sold in 2017.

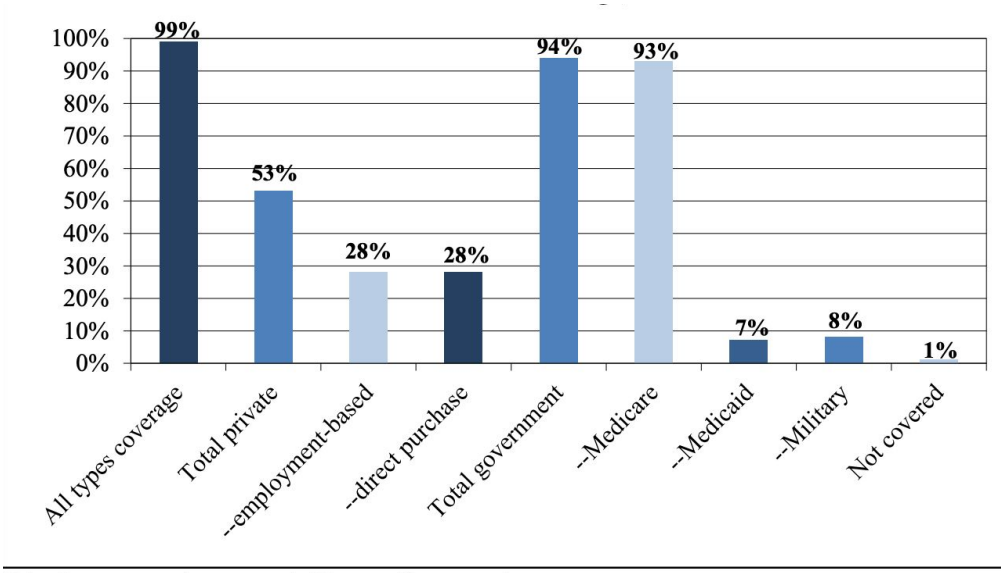
[11] US Department of Health and Human Services. (2019). A Profile of Older Americans: 2018. Washington, DC: US Government Printing Office.
[12] "Profile of Older Americans | ACL Administration for Community Living," accessed April 21, 2020, https://acl.gov/aging-and-disability-in-america/data-and-research/profile-older-americans.
[13] "National Study of Long-Term Care Providers - Reports," April 29, 2019, https://www.cdc.gov/nchs/nsltcp/nsltcp_reports.htm.
[14] "Nursing Home Data Compendium 2015," 2015, 251. CMS, accessed April 21, 2020, https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/Downloads/nursinghomedatacompendium_508-2015.pdf.
[15] https://www.cdc.gov/nchs/fastats/nursing-home-care.htm
[16] https://www.cdc.gov/nchs/fastats/nursing-home-care.htm
[17] https://www.cdc.gov/nchs/fastats/residential-care-communities.htm
[18] https://data.cms.gov/stories/s/COVID-19-Nursing-Home-Data/bkwz-xpvg/
[19] https://www.nytimes.com/interactive/2020/us/coronavirus-nursing-homes.html
[20] https://www.urban.org/research/publication/who-covered-private-long-term-care-insurance

Additionally, the number of insurers selling LTC insurance policies has diminished from over 100 to around a dozen. The decline in market competition has allowed premiums to increase, with average monthly rates increasing from $1,071 in 1990 to $2,772 in 2015.[21] Fewer than 0.5% of employers offer LTC insurance,[22] and many people are hesitant to purchase LTC insurance due to worries about the solvency of insurers, a low estimation of their future needs, and incorrect beliefs that Medicare or private health insurance will pay for this care.[23] A further concern is that unlike in health insurance, underwriting is allowed in LTC insurance, meaning underlying conditions or prior genetic tests could impact one's ability to purchase a policy.[24] It has been estimated that among the general population, 40% of people would have their application for LTC insurance rejected due to underwriting.[25]

With LTC insurance not being widespread, and with Medicare not covering most LTC, residents are left to either pay out of pocket or to turn to Medicaid. To become eligible for Medicaid, residents must have low income and must have low savings, meaning many must "spend down" their existing resources.[26] This is also a structural contributor to a prohibition against the accumulation of wealth within families that disproportionately affects people of color. Although Medicaid is the primary payer for about 62% of residents,[27] its payment rates are often not enough to cover the true cost of care. Rates vary across states, but the average national daily rate paid by Medicaid is $206, while for Medicare it is $503, and for private payors it is $257.[28] It is estimated that Medicaid payments to nursing homes are on average $22.46 below actual costs per patient day,[29] and the Massachusetts Senior Care Association claims that the average facility in Massachusetts loses almost $1 million per year caring for Medicaid recipients.[30]

Figure 1: Percentage of Persons of age 65 and Over by Type of Health Insurance Coverage, 2016

[21] https://content.naic.org/sites/default/files/inline-files/2019_CIPR_LTCI%20Brief.pdf
[22] https://content.naic.org/sites/default/files/inline-files/cipr_current_study_160519_ltc_insurance.pdf
[23] https://www.healthaffairs.org/doi/10.1377/hlthaff.2011.1307
[24] https://ghr.nlm.nih.gov/primer/dtcgenetictesting/dtcinsurancerisk
[25] https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1133
[26] https://ldi.upenn.edu/sites/default/files/pdf/LDI%20Issue%20Brief%202019%20Vol.%2023%20No.%201_7_0.pdf
[27] https://www.kff.org/infographic/medicaids-role-in-nursing-home-care/
[28] https://www.nic.org/blog/medicaid-reimbursement-rates-draw-attention/
[29] https://www.ahcancal.org/research_data/funding/Documents/2015%20Medicaid%20Underfunding%20for%20Nursing%20Center%20Care%20FINAL.pdf.
[30] https://skillednursingnews.com/2019/09/voters-could-decide-on-medicaid-nursing-home-rate-increases-in-massachusetts/



Note: A person can be represented in more than one category.
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement. [31]

For an in depth analysis of health insurance coverage and gaps of care for older adults and nursing homes, look here.

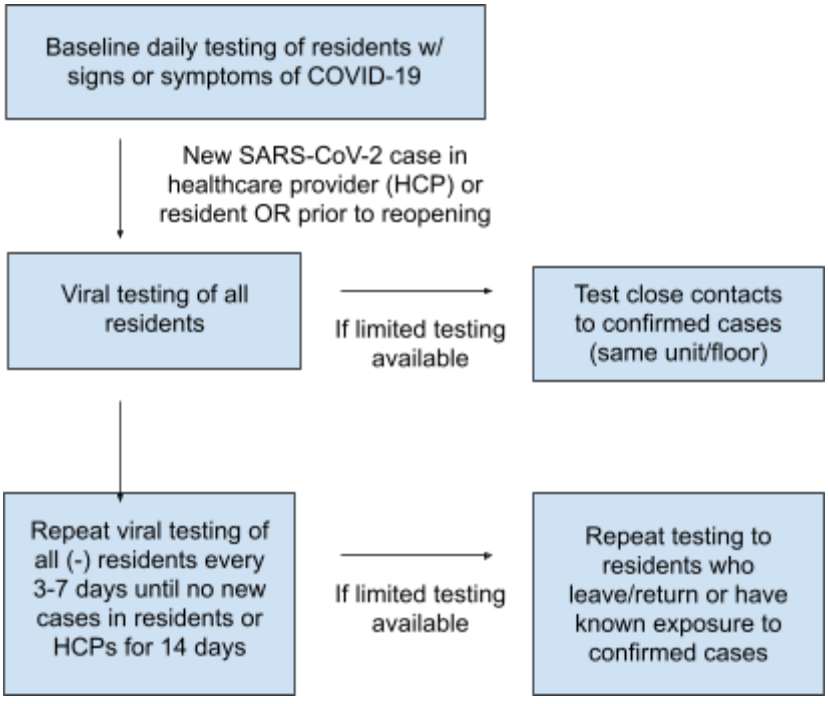
COVID Testing & Infection Control in LTC Facilities

On April 30, the CDC put forward prophylactic (screening, hygiene, visitation), response (IPC, PPE, quarantine), and reopening (testing, visitation, communal activities, field trips) guidelines for facilities to follow.[32] On May 11, 2020, the White House's Coronavirus Task Force made a nationwide recommendation that all nursing home residents & staff should be tested in the subsequent two weeks.[33] However, due to a lack of resources and coordination issues, this recommendation was not followed by ~50% of states.[34] One of the main barriers to this issue was the financial burden of testing. Testing ranges from $50-110 per test. Under Medicare, FFS & Advantage plans cover PCR tests, and Part B reimburses $100 for PCR tests and $35 for others. However, for residents in skilled nursing facilities as a part of Medicare Part A coverage, the cost may be borne completely by the facilities. In New York, where facilities are responsible for all testing costs, testing 2x a week for 200 staff members would cost up to $80,000 a month.[35] Another issue has been the nationwide shortage of testing. The American Health Care Association & National Center for Assisted Living has provided LTC facilities with a list of testing vendors that provide tests that have been approved by the Food

[31] https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2017OlderAmericansProfile.pdf
[32] https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-responding.html
[33] Freking, K., & Condon, B. "White House recommends tests for all nursing home residents". Associated Press, May 11, 2020. https://apnews.com/1a169a537c6fb7f9ab824c49a6757b0c
[34] Brewster, J. "Half Of U.S. States To Fall Short Of White House Goal On Nursing Home Testing". Forbes, May 24, 2020. https://www.forbes.com/sites/jackbrewster/2020/05/24/half-of-us-states-to-fall-short-of-white-house-goal-on-nursing-home-testing/#c272dbf504d1
[35] The Society for Post-Acute and Long-Term Care Medicine. "Policy Statement: COVID-19 Testing Strategies Should Be Tailored to the Clinical Situation". AMDA, May 18, 2020. http://paltc.org/sites/default/files/AMDA%20Policy%20Statement%20on%20Testing%202020%2005%2018%20FINAL.pdf

and Drug Administration (FDA).[36] However, reports have stated that "only about a third of the nation's 15,000 nursing homes have ready access to tests."[37] In addition to the issues obtaining testing, this is further complicated because the Centers for Disease Control and Prevention (CDC) recommends that facilities choose only one laboratory for all of their tests and to provide consistent reporting to health departments.[38]

Major industry associations and LTC facilities follow "Interim SARS-CoV-2 Testing Guidelines for Nursing Home Residents and Healthcare Personnel" published by the CDC.[39] These guidelines recommend that there should be rapid turnaround times of <24 hrs for testing results and a focus on PCR testing instead of serologic antibody tests. A flowchart of the recommended testing policies is summarized in Figure 2. Previous versions of the guidelines recommended that all residents and healthcare professionals (HCP) be included in testing, but on July 1st this was changed to just focus on nursing home residents. When facilities are doing symptoms screening they should be using the following signs or symptoms: fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea.

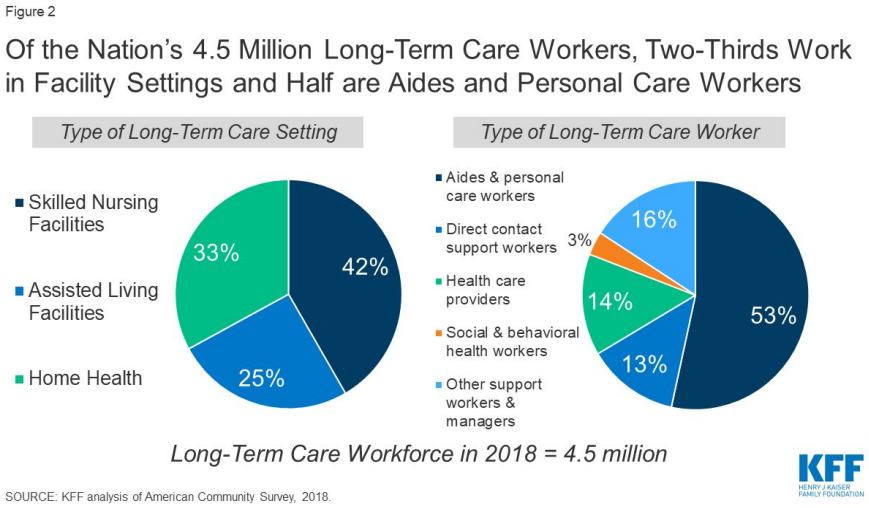


[36] American Health Care Association, & National Center for Assisted Living. "COVID-19 Testing Vendors for LTC". AHCA, July 21, 2020.
https://www.ahcancal.org/facility_operations/disaster_planning/Documents/COVID%20Testing%20Vendors%204%209%2020.pdf
[37] Associated Press. "'We've been ignored': Nursing homes plead for more testing." Modern Healthcare. April 23, 2020.
https://www.modernhealthcare.com/safety-quality/weve-been-ignored-nursing-homes-plead-more-testing
[38] Centers for Disease Control and Prevention. "Testing Facility-Wide Considerations for Performing Facility-wide SARS-CoV-2 Testing in Nursing Homes." CDC, May 19, 2020
https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-facility-wide-testing.html
[39] Centers for Disease Control and Prevention. "Testing Individuals: Interim SARS-CoV-2 Testing Guidelines for Nursing Home Residents and Healthcare Personnel." CDC, July 21, 2020.
https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-testing.html

Figure 2. Flowchart of the CDC's Testing Guidelines for Nursing Home Residents and Healthcare Personnel as of July 21. Updates: On September 10, the CDC created a this one pager to synthesize all of their testing information.

LTC Workforce

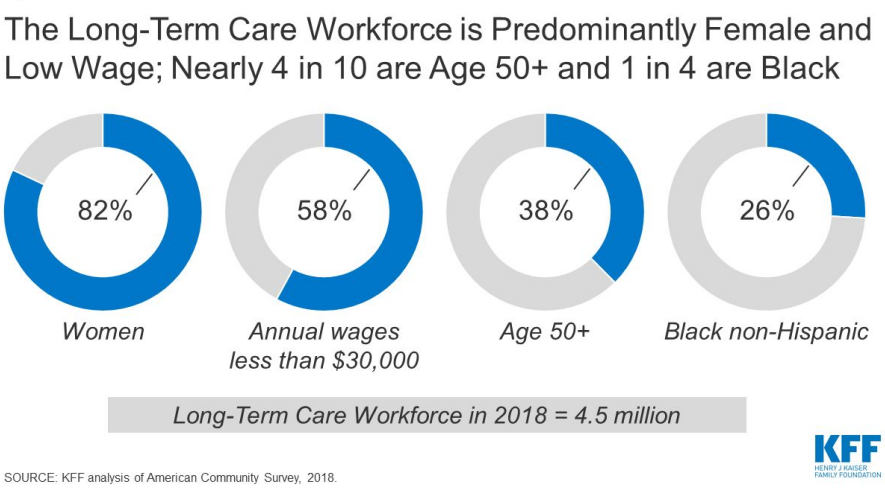
We cannot discuss LTC facilities without discussing staff. For a majority of the LTC workers, if they suspend their services, the health and wellbeing of their residents will be compromised. The LTC workforce consists of several occupations, including aides and personal care workers, direct contact support workers (custodians, housekeeping and laundry, or food service workers), health care providers (registered nurses, nurse practitioners, physicians, and various types of therapists and technicians), social and behavioral health workers (providers of social work, counseling, and behavioral health services), and other support workers and managers (office and administrative managers and staff, receptionists, nutritionists, groundskeeping and facilities workers). They vary in terms of direct resident contact, but most - about two thirds - of the 4.5 million[40] LTC workers are in high touch positions as aides and personal care workers.



Aides have received some training or a state certification and may be asked to help residents with eating, bathing, and dressing as well as moving residents with limited mobility, hence the high touch nature of their positions. The aides, and therefore a majority of the LTC workforce, is predominantly Black (26%), female (82%), and low-wage earners (58% are in the bottom two wage quintiles for earners overall, earning less than $30,000 in 2018).[41] Because of aforementioned deeply rooted systemic issues, these qualities make aides a higher risk group.

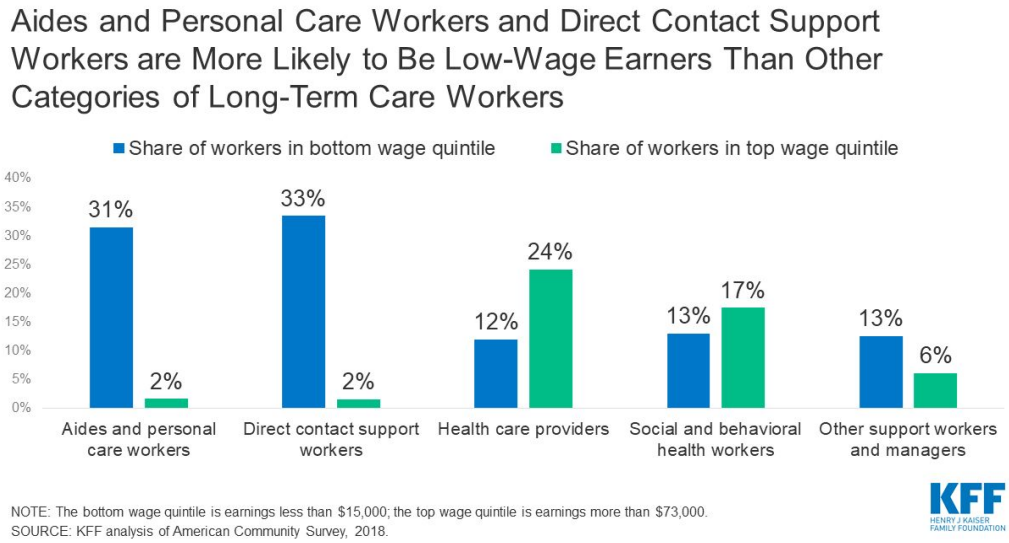
[40] https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-and-workers-at-risk-examining-the-long-term-care-workforce/
[41] https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-and-workers-at-risk-examining-the-long-term-care-workforce/

Figure 1



SOURCE: KFF analysis of American Community Survey, 2018.

Figure 3



NOTE: The bottom wage quintile is earnings less than $15,000; the top wage quintile is earnings more than $73,000.
SOURCE: KFF analysis of American Community Survey, 2018.

Many of the new COVID prevention guidelines and policies rely heavily on the support and action of CNAs and RNs who form the backbone of nursing home care. Among members of the LTC care team, CNAs and RNs have the most direct contact with LTC residents, with CNAs spending 2.81 hours/day with residents and RNs spending .75 hours/day with residents. They assist residents in performing their activities of daily living, such as dressing, bathing, toileting, and eating. For this reason, nursing staff members are at higher risk of both acquiring and transmitting infection to the residents they care for. Through contact tracing, LTC staff have previously been identified as the source of LTC COVID outbreaks – nursing homes in which nursing staff are employed by more than one LTC are particularly at risk.[42] Because of this, it is especially important that CNAs carry out infection control practices, such as proper PPE donning and use, sanitization and handwashing. Additionally, because CNAs

[42] Ladhani, S. N., Chow, J. Y., Janarthanan, R., Fok, J., Crawley-Boevey, E., Vusirikala, A., ... & Wynne-Evans, E. (2020). INCREASED RISK OF SARS-CoV-2 INFECTION IN STAFF WORKING ACROSS DIFFERENT CARE HOMES ENCHANCED CoVID-19 OUTBREAK INVESTIGATIONS IN LONDON CARE HOMES. *Journal of Infection*.

spend the most facetime with residents, CNAs will often have the first opportunity to report signs and symptoms of COVID among the individuals they care for.

The current role of the certified nursing aide (CNA) is derived from the medical model: they are at the bottom of a hierarchy performing task-oriented care that was defined and directed by someone above them. This hierarchy has led to longstanding barriers in CNAs' ability to advocate for autonomy, respect, and personal safety. CNAs are chronically underpaid, within 200% of the federal poverty line[43]. This compensation fails to reflect the emotional and physical demands of LTC work and can be a potent barrier to self-advocacy for those who fear losing their economic lifeline. Many CNAs struggle with lack of respect from superiors and report being kept out of the loop in administration's decision-making with respect to workplace safety and resident care. Moreover, CNAs often bear the brunt of LTC infrastructure issues. In understaffed facilities, they must care for excess residents, manage strained trust between facilities and residents' families, and navigate structural lapses in infection control. It is no surprise that CNAs face increased risk of depression and workplace abuse compared to workers in other minimum wage professions, along with a lack of job ladders or paths towards professional development.

While guidelines and training are necessary to educate CNAs and other LTC staff members about infection control practices, they may not be sufficient to support LTC staff in carrying out these practices. CNAs engage in difficult and emotionally demanding work – data suggests that burnout rates among LTC staff are significantly higher than among acute-care hospital staff.[44] Burnout rates as high as 40% have been reported among LTC caregivers.[45] Not only does burnout diminish quality of life for nursing staff, but it can have a profound impact on the residents that they care for. Burnout among LTC caregivers can lead to depersonalization, or a decreased sense of empathy and caring towards LTC residents who depend on nursing care. Burnout and depersonalization are associated with lower satisfaction and higher rates of depression among nursing home residents.[46] In addition, poorer safety outcomes are significantly correlated with higher burnout rates among LTC staff.[47] One study identified that burnout among LTC nursing staff was associated with a significantly higher rate of pressure ulcers and hospitalizations among nursing home residents.[48] Researchers also identified a trend towards higher antipsychotic use in nursing homes with lower nursing job satisfaction.

As we continue to work towards protecting vulnerable LTC residents from the COVID pandemic, we need to consider how to best support our LTC nursing workforce. These members of the healthcare team will be invaluable in identifying holes and barriers in our

[43] https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-and-workers-at-risk-examining-the-long-term-care-workforce/
[44] Tourangeau, A. N. N., Cranley, L., SPENCE LASCHINGER, H. K., & Pachis, J. (2010). Relationships among leadership practices, work environments, staff communication and outcomes in long-term care. *Journal of nursing management*, *18*(8), 1060-1072.
[45] Kandelman, N., Mazars, T., & Levy, A. (2018). Risk factors for burnout among caregivers working in nursing homes. *Journal of clinical nursing*, *27*(1-2), e147-e153.
[46] Chao, S. F. (2019). Does geriatric nursing staff burnout predict well-being of LTC residents?. *Geriatric Nursing*, *40*(4), 360-366.
[47] Hall LH, Johnson J, Watt I, Tsipa A, et al. Healthcare staff wellbeing, burnout, and patient safety: a systematic review. PLoS One. 2016;11(07) e0159015.
[48] White, E. M., Aiken, L. H., Sloane, D. M., & McHugh, M. D. (2020). Nursing home work environment, care quality, registered nurse burnout and job dissatisfaction. *Geriatric Nursing*, *41*(2), 158-164.

infection control policies, identifying areas of risk and contamination not seen by management, and implementing the infection prevention measures that will allow LTC residents to continue to live in safety.

Problem

Covid-19 has exposed and exacerbated existing problems in nursing home communities that affect vulnerable populations.

Large scale disasters expose existing structural problems in our systems by magnifying and exacerbating them; in the case of COVID-19, the magnification manifested in widespread loss of life for nursing home residents and staff. This outcome was a result of cracks, problems, and challenges that nursing homes were already facing - long standing difficulties with infection control, understaffing, the hierarchical construction of nursing homes, nursing home funding, lack of attention to wellbeing and quality of life that has contributed to resident disengagement and isolation, etc. These problems were always affecting the most vulnerable populations in nursing homes - frontline staff and residents - with the effects grossly magnified at the onset and throughout the duration of the pandemic.

How do we define vulnerability?

Residents in long term care facilities are typically older adults. Older means weaker immune systems, higher burden of chronic disease, impaired ability to communicate needs, atypical symptoms of all disease processes, more at risk for getting sick, and becoming severely ill and dying. When coupling the predisposition for illness that comes with aging with long term care facility factors - high resident density, high touch care, and the dehumanization and overmedicalization of the older body - residents become a highly vulnerable population.

Frontline staff, typically CNAs are made vulnerable as a result of a number of factors. CNAs have high rates of being English second language learners, work long hours, have low wages, experience high touch care, are the lowest in the LTC hierarchy, are mostly low income women, often work in more than one facility, and may live in tight living quarters with others who work in “essential” roles and are not able to physically isolate. They have the least ability to protect themselves, least able to take sick days, advocate for PPE and testing, and advocate for change in nursing home policies and protocols that could make their ability to decrease infection possible. These factors (1) grant them high exposure to infectious disease and (2) make them a high risk carrier group. Finally, when COVID-19 hit, and NH staff became sick or afraid of getting sick, staffing numbers decreased in these facilities, which further accentuated all of these problems.

What existing structural problems do we need to be aware of?

Rigid, baseline guidelines and quality markers that don’t reflect holistic care

CMS uses measures such as number of infections and weight loss as proxy measures for the quality of care. While these are important, these measures do not include anything about

quality of life, meaning, purpose and engagement, which are arguably much more important to older adults living in these facilities. We know loneliness is linked to morbidity and mortality and we have seen that result in our nursing homes as a secondary effect of the COVID-19 response. Furthermore, while these disease-based measures can be used to highlight facilities at risk of patient negligence (the reason these protective measures were originally developed), they may not be what we want to use as quality measures and goals in our facilities caring for our loved ones. We are not measuring what matters. Lastly, some of these measures are measures of decline. We cannot prevent decline in older adults nearing the end of life, but we can engage in supportive and meaningful care processes that may require new modes and models of measurement. Finally, two recent studies[49] have shown that quality measures had no relationship to COVID-19 deaths.

Inadequate nursing home funding and for-profit structures

Nursing homes operate on razor thin margins and most are largely funded by Medicaid, with Medicaid being the payor for a majority of residents. Medicaid reimbursement varies from state to state; on average, Medicaid payment rates have a shortfall of $22.46 per patient day, leading to perpetual deficit. In this for-profit setting, as in many other industries, nursing homes compete over Star Ratings, quality measures, and fret over how to spend the minimal resources they have, leading to high ownership turnover and constant change in care for residents and staff. Medicaid reimbursements simply are not enough to care for older adults living in a nursing home. There are some advances here, with Medicare Advantage, or Medicare/Medicaid Institutional Special Needs Plans, but they have not been operationalized or implemented because, simply stated, people with the skills to do this work are choosing to go into jobs and fields with greater prestige. This is a system that leads to 2 tier care for older adults, i.e. segregation: wealthy people with private pay, and families without wealth on Medicaid, the latter of which is disproportionately composed of people of color.

Rigid nursing home hierarchy

While frontline staff know residents best - spending the most amount of time with the residents (2.81 h/d for aide time with resident, vs 0.75 h/d of nurse time), behaviors, interests, and functional status, providing intimate care, hygiene, feeding, sometimes engaging in activities or exercise as well - they also have the least decision making power, the least access to creating a plan of care, the weakest connection to physicians and family members, and the weakest voice in building infection control protocols, although they are the ones implementing these protocols. Staffing inconsistencies and turnover may be attributable to the high pressure nature of frontline staff and nursing work, their low position on the hierarchy, and infrequent systems of support, as well as all of the factors that make frontline workers a vulnerable population. This model stands in direct opposition to the highly integrated team model being used in chronic care settings throughout healthcare, outside of nursing homes.

[49] https://jamanetwork.com/journals/jama/fullarticle/2769437?resultClick=1, https://onlinelibrary.wiley.com/doi/10.1111/jgs.16689

Overmedicalization of residents, and the undermedicalization of home models

The dual role of nursing homes - that they are homes in which people live, but also medical facilities in which people are cared for - puts older adults at risk of either living in an environment where there is insufficient attention to a more medical approach, such as robust infection control practices, or where there is insufficient attention to our human needs as we age, leaving them to become passive bodies to be cleaned and fed, rather than people in need of touch, connection and meaning.

In line with the above paradox, nursing homes were not considered as medical facilities and aides were not counted as providers when COVID-19 first hit; as a result, PPE was not funneled to nursing homes, where the population was at the most risk for the virus, and testing is still not widespread, in a space where staff are known to be high risk carriers.

Depersonalization, and dehumanization needed to mentally survive working in a NH

There are innumerable psychological difficulties associated with working in a nursing home. The numbness, depersonalization, and dehumanization may be a necessary strategy to survive the day by day intake of suffering and end of life for staff, especially when support and psychological safety measures are not in place to alleviate constant mental distress. In addition, when the suffering of residents isn't acknowledged, no active measures to improve or prevent suffering "need" to be enacted, saving costs in the short term.

'Bright spots' are not emphasized, acknowledged, or widespread

Anecdotal evidence suggests that "bright spots" exist, and we can couple these with the culture change data around Greenhouses and frontline worker agency. Unfortunately, the potential expense and effort to enact change prevent these from being widespread.

Opportunity

COVID-19 has presented a unique opportunity to address the larger structural issues plaguing nursing homes. Based on these problems, we think Ariadne Labs has an opportunity to address quality markers, advocacy, and hierarchy and interdisciplinary teams via innovative roles for frontline staff and transparent communication tools between the administration and staff. To tackle the problems around the conflicting home vs medical model, dehumanization, and not scaling bright spots, we have built the principles and criteria for our solution around embracing the highest medical standards of geriatric and palliative care and increase support for the home part of nursing homes to achieve a person centered approach, and allowing the entire care team to center wellbeing.

Goals

Our primary goal is to design a solution to support nursing home communities, to ensure safe processes, wellbeing, and dignity of vulnerable populations during the COVID-19 crisis and beyond.

Intended Impact

There are several outcomes we hope to achieve with this work. We want to transform Nursing homes into places where people want to live, and where people want to work. This includes increased staff retention, decreased turnover, higher levels of team engagement, morbidity and mortality improved by attention to wellbeing as a critical factor for health of older adults, capturing the expertise of front line staff, and using effective communication tools and systems thinking to address infection control and the challenges of long term care facilities.

Scope and bounds

Our solution will focus on nursing homes in the United States; those involved in our solution include residents, frontline staff, the clinical team, and the administration of long term care facilities.

Existing Solutions

Nursing homes were meant to act as a solution to our concerns and questions about the care and wellbeing of older adults as they aged. Unfortunately, nursing homes were not a perfect solution, and generated a series of compounding problems for the entire nursing home community. As such, several solutions and interventions have been implemented; broadly, many of these solutions were targeted to solve sub-problems within nursing homes, and these interventions fall into several categories. We present a high level summary of these solutions, with the acknowledgement that there are many more not mentioned here; we prioritized presenting solutions that captured some data.

Care improvement tools and interventions

There are an innumerable amount of care improvement tools, frameworks, and measures including the Stop and Watch Early Warning tool, MY STORY, 4Ms Framework, U-Age person centered care intervention, Capability, Opportunity, Motivation, Behavior (COM-B) model of behavior change intervention, and the Quality of Life Structured Resident Interview and Care Plan.

In recent years there have also been pushes for quality of life metrics specifically designed for nursing home settings, with extensive work funded by the Center of Medicare and Medicaid Services, led by the remarkable and recently deceased Rosalie Kane at the University of Minnesota. The domains their team are assessing to incorporate into their measure include comfort, security, meaningful activity, relationships, functional competence, enjoyment, privacy, dignity, autonomy, and spiritual wellbeing. The scope of quality of life metrics that exist is astronomical, and while the data support the use of these metrics, the decision of which one and implementation instructions are virtually nonexistent. At the same time, there is still a need for a strong quality of life and wellbeing measure.

Each of these tools and interventions center what matters, thriving, and the whole person. However, this is one piece of the problem - the devaluation of life, which is one of many barriers to a successful intervention. Many of these interventions and tools also do not fit with typical nursing home workflow, are complex, and are resource intensive. As a result, these interventions have not been scaled and are not taken up as a part of the daily nursing home routine.

Staff Interventions

The Center for Medicare and Medicaid (CMS) data on 175 skilled nursing facilities between 2005 and 2009 reveals that supportive work environments are associated with better health outcomes for residents and staff alike. LTC facilities are dependent on the teamwork of a diverse network of individuals to appropriately support their residents. These teams are comprised of facility administrators, registered nurses (RNs), certified Nursing Assistants (CNAs), Physical Therapists (PTs), occupational therapists, nutritionists, MDs, NPs, support employees, and most importantly, the patients themselves. Therefore, any initiatives to improve team structures must also be paired with efforts to involve residents in their care decisions to provide person-centered care.

Teamwork models in LTC facilities have traditionally operated in a top-down hierarchical model. However, preliminary studies of how flattened hierarchies function have been positive. For example, one study of 164 nursing homes in Texas showed that greater communication openness, RN participation in decision making, and relationship-oriented leadership were related to positive resident outcomes.[50] These findings can also be corroborated by meta-analyses that show that positive leadership traits among nursing leaders is correlated with overall reduced rates of adverse events.[51] A number of studies have shown that team restructuring allowing for CNA empowerment via engagement in decision making and supervision led to an improvement in overall CNA job performance.[52,53] Finally, structural overhauls of the nursing home model of care, such as the Greenhouse and Eden models, have placed nursing at the center of care and emphasized nursing empowerment. These models have demonstrated positive quality metrics, with lower rates of ulcers, hospital readmissions, and catheter use.[54]

In 2000, the Nursing Home Quality Initiative was enacted by the legislature. This comprehensive $50 million initiative was created to improve the quality of care to seniors and disabled individuals, and to address key health industry problems of attracting and retaining

[50] Anderson, R. A., Issel, L. M., & McDaniel Jr, R. R. (2003). Nursing homes as complex adaptive systems: relationship between management practice and resident outcomes. *Nursing research*, 52(1), 12.
[51] Wong, C. A., & Cummings, G. G. (2007). The relationship between nursing leadership and patient outcomes: a systematic review. *Journal of nursing management*, *15*(5), 508-521.
[52] Yeatts, D. E., & Cready, C. M. (2007). Consequences of empowered CNA teams in nursing home settings: A longitudinal assessment. *The Gerontologist*, *47*(3), 323-339.
[53] Woodhead, E. L., Northrop, L., & Edelstein, B. (2016). Stress, social support, and burnout among long-term care nursing staff. *Journal of applied gerontology*, *35*(1), 84-105.
[54] Afendulis, C. C., Caudry, D. J., O'Malley, A. J., Kemper, P., Grabowski, D. C., & THRIVE Research Collaborative. (2016). Green house adoption and nursing home quality. *Health Services Research*, *51*, 454-474.

skilled direct care workers. The Extended Care Career Ladders Initiative was part of this larger initiative; while largely deemed a success, the project was not scaled.
For more details on the EECLI Program, look here.

Four major issues have been previously described as preventing improvements in healthcare teams from being implemented: resource gaps, skills gaps, motivation gaps, and systemic barriers. While all of these factors contribute to teamwork rigidity in LTC facilities, systemic barriers, which also encompasses institutional culture is especially an issue. This results from the fact that the industry is highly regulated and focuses on financial profit. Charlene Harrington, a UCSF professor who studies nursing homes, stated that the "too often, the financial interests of for-profit nursing homes come into conflict with their mission to care for older adults."[55] Within this incentive structure, staff members are evaluated based on how well they can contribute to the financial success of facilities, instead of supporting their growth and insights. Another perceived barrier is that the primary caregivers to residents, certified nurse assistants (CNAs), operate after only short training and orientation programs. However, despite this limited training, CNAs spend extensive time with each resident, and thus are uniquely posed to provide input on their residents current status and needs.

Alternative nursing home models

Model Name	Unique Features
Greenhouse Model	Cluster of 10-12 residents; shahbazim instead of nursing aide
Neighborhood Model	8-12 resident pods; nursing stations eliminated
PACE	"Day Care" model, with many services provided in house
ElderPac	Integrated cross-agency teams, free communication, patient-centered care, small caseloads

Greenhouse Model

The "small house" model, most widely implemented and described by the Green House program, physically re-designs nursing homes in the image of community households. The traditional nursing home building resembles a large hospital, with many floors and long halls of bedrooms. The "small house" model is exactly as it sounds - the nursing home consists of small buildings designed like houses in the community. A cluster of 10-12 residents usually occupy one of these homes, and they will share common living spaces such as a kitchen, living

[55] Novotney, A. "It's time to re-think nursing home ownership, say senior care experts." McKnight's Senior Living. May 22, 2020. https://www.mcknightsseniorliving.com/home/news/business-daily-news/its-time-to-re-think-nursing-home-ownership-say-senior-care-experts/

and dining rooms. Staff including nursing are specific to each cluster of residents and thus are able to build and strengthen relationships with the residents.[56] The Greenhouse model also has an alternate version of the nursing aide, called the shahbazim. They have a larger purview; in addition to the traditional care responsibilities of a CNA, the shahbazim cook, do laundry, and perform various janitorial and maintenance duties.

Neighborhood Model

The neighborhood model allows for the restructuring of nursing homes without physically demolishing and rebuilding existing nursing homes. This model de-centralizes and individualizes many aspects of nursing home life in a manner similar to the Small House model. Although contained in a large-scale, hospital-esque building, the living quarters of residents are subdivided into small pods rather than long hallways or large floors. Pods often contain around 8-12 residents, and have their own amenities including dining halls and lounging areas. Nursing stations are usually eliminated. Again, an effort is made to have consistent, pod-specific staffing for continuity and relationship building between residents and staff.[57]

PACE

Programs for All-Inclusive Care for the Elderly (or PACE) are a collection of programs that serve predominantly Medicare/Medicaid dual-eligible elders. These programs allow older adults to remain in the community by providing all of the services normally offered by nursing homes, through adult day care centers. Older adults who require assistance with ADLs and IADLs are able to live in their own homes, but are provided daily transport to the day center, where nursing care, meals, bathing and ADL assistance, and medical support is provided. Social opportunities and activities are also provided. At the end of the day, PACE program members are brought back to their own homes. Housekeep and other ancillary services are provided in-home, although most services are provided through the day center to keep costs low. In this way, elders can maintain their own homes, but have access to all the resources present in a traditional nursing home model.[58]

ElderPac

Just as acute care hospitals have experimented with “home inpatient” models of care delivery, and CMMI has tested its “Independence at Home” demonstration project, many have pushed forward long-term care in home-based systems. These models can adapt based on individual needs and range from informal services, to skilled home care, to near-hospital at home models with more NP and MD involvement. Similar to the Elder Day Care Models, many of these programs are aimed at dual eligibles. ElderPAC is a University of Pennsylvania home-based primary care initiative for older and frail adults. The key features of their program are: (1) an integrated, cross-agency, team, (2) free communication between team members, (3) patient-centered care, and (4) small caseloads. An evaluation of this model demonstrated a 40-50% reduction in Medicare costs, decreased time spent in traditional LTCs,

[56]https://chelseajewish.org/short-term-rehab/leonard-florence-center-for-living-chelsea; https://www.theatlantic.com/business/archive/2015/04/a-better-nursing-home-exists/390936/
[57] Ortigara et al., 2018; Green, 2014; Chang et al., 2013
[58] Ada et al., 2002; Sloane et al., 2014

and survival benefit (Valluru et al 2019; ElderPAC). These programs can be supported by caregiver support recognizing that the unpaid work of family caregiving is in the 100s of billions of dollars.[59]

While these new and innovative models show promise, more data on their efficacy as well as additional costs are necessary before they can be widely implemented.

Overall, these existing solutions show promise; however, a larger paradigm shift is necessary for any solution to have impact at scale. In the following sections we will outline our design principles and criteria to move towards more scalable, systems-level solutions that go beyond one aspect of care. During our convening, we will ask you all to apply these principles and criteria to the proposed path forward.

Design Principles and Criteria

The following are the principles that will guide our design for a solution.

Principles

We believe a solution needs to embody the following principles: interdependence, equity, social connectedness, the best of home and hospital, and wellbeing.

Interdependence:	Build on the positive relationships that residents and staff have experienced as a bright spot and a source of strength during the pandemic.
Equity:	Address the impact of existing inequities in nursing homes compounded with COVID disparities and the current national conversation about racial equity.
Social Connectedness:	Promote social connectedness of residents, family members, and staff to prevent isolation and loneliness.
Best of Home & Hospital:	Leverage the best from the home aspect of nursing homes, and the medical aspect of nursing homes, to embrace a framework that allows the resident to live with agency and dignity, and allows staff to work without the restrictions of hierarchy.
Wellbeing:	Promote wellbeing and 'what matters' to older adults combat dehumanization of older adults.

[59] Sloane et al 2014

Criteria

Impact	Taking our learnings from bright spots, prioritized solutions have the most potential to change outcomes.
Evidence	Prioritized solutions have high quality evidence of successful improvement for wellbeing.
Scalability	Prioritized solutions have the potential to be scaled across a wide range of nursing home facility types and contexts.
Sustainability	Prioritized solutions will have limited barriers (resource, time, or cost) to ensure scalability over time.
Feasibility	Prioritized solutions can be implemented through a tool, workflow, training, or other means
Person-Centered	Prioritized solutions will ensure person centered language to combat the frequent dehumanization older adults face; this tackles the dehumanization.

Proposed Path Forward

As illustrated in the rest of this document, there have been endless innovations, tools and studies that have tried to address one piece of this puzzle or the other. However, these interventions have not been scaled. They either stay within one type of facility, ie the Greenhouse model, or they stay within one area of the nursing home but do not change the larger culture of that institution. We believe this is because the intervention required is one that addresses both staffing and the experience of the older adult, and lives in the interdependence of these relationships. The intervention, to be successful, has to affect the whole nursing home system.

Wellbeing Quality Markers

In creating a paradigm shift, we are hypothesizing that older adults living in nursing homes need a different goal or metric for their care that isn't health or disease-based outcomes. While important, health may not be attainable or primary in one's last years. What matters, at a population level, is wellbeing despite chronic disease, despite cognitive impairment, and while living in a long term care facility. We believe we need a framework and measure of wellbeing to put what matters to older adults at the center of our nursing home care and to balance the medical model. We need to build it explicitly into our work as part of our care plans, as a metric of success, and as a goal of nursing home life. We are attempting to let form follow function, where function is living fully at the end of life, despite illness, debility

and frailty; and form is creating the role that can sustain those goals in the community of a NH. Similarly, function is decreasing infectious disease in NHs and form is empowering those most at risk for spreading infection to those who are best able to prevent it. Here we see a positive feedback loop: enhanced quality of life leads to greater engagement, more activity, less time in bed, decreased pressure sores, and UTIs, and these areas mutually enhance each other.

Among existing wellbeing metrics and quality markers, there is a deficit of validated, scaled wellbeing quality markers and metrics, but evidence does support that evidence to wellbeing improves health outcomes. A new evidence based metric for wellbeing must be designed to add to CMS guidelines to shift from the deficit model to a model that centers on what the resident can do, tailored around what matters most to them.

Re-imagining the roles of frontline staff

The second area we have focused on is developing the roles that are needed to support nursing home care delivered around a model of wellbeing. We see the opportunity to use high functioning interdisciplinary teams to manage care; to do this, we expect transforming traditional NH staff hierarchies into high functioning interdisciplinary teams is the path forward. These teams would elevate the role and expertise of frontline staff, as they have the most facetime with the residents. Our current structure misses out on expertise and data; we need to recognize that expertise and bring it into our care teams, and center it in our care plans.

As we stated above, the frontline staff have an exclusive relationship to and access to nursing home residents. This role needs to be adapted in the way that form follows function; if the function is to support wellbeing, the front line workers need to be more than personal care assistants. We can look at the shahbazim, the CNA corollaries in the Greenhouse model, who provide personal care but are also involved in activities, cooking, family relationships and, in some models, are more closely connected to the nurses in ways that allow more rapid and efficient reporting of any clinical changes requiring medical assessment or intervention. We could look at a community health worker model, where the community is the nursing home.

The dyad of the resident and CNA considers that the two are at the center of care - physically and emotionally. We hypothesize that the dyad approach will improve clinical outcomes, decrease costs, decrease CNA turnover, prevent infection, and allow the older adult to have an advocate in the CNA to enhance their voice in care. With a new dyad model, CNAs would be able to participate in infection control planning, act as a patient advocate, and be more fully engaged in their interdisciplinary, non-hierarchical team.

Communication tools

These two areas, a framework for wellbeing and a re-imagined role for front line staff, offer the building blocks for a fundamental shift in how we provide care to older adults who require nursing home support. The tools to do this work include high functioning teams and excellent communication tools. We know that both require trust, flat hierarchies, good communication

and interdisciplinary engagement, as they form the backbone of high quality geriatric care and chronic disease management.

From both our background research and our interviews with staff in nursing homes, there has been a clear need for tools that communicate the ever-changing guidelines and regulations related to COVID. We see communication tools, in the forms of daily update boards by the nurses' station, PPE signs on all of the doors, and anonymous reporting systems to voice concerns as being inherently anti-hierarchical and enforcing transparency, because all parties will be privy to the same information. These communication tools are not limited to COVID, but rather can be expanded to be used across several waves of infections known to plague nursing homes.

Advocacy

As an evidence-action lab and a field catalyst, Ariadne Labs believes that, alone, regardless of how widespread and successful our tool or intervention will be, the problems surrounding older adults and nursing homes require complex social change. As we create evidence based solutions, we rely on and aid stakeholders in the policy space to scale them up and promote our message. Therefore, we will not be designing policy-based solutions, but rather spread the message via op-eds, viewpoints and perspective pieces, and stakeholder convenings. Thus far, we have published op-eds on the immigrant workforce in LTCs, Medicaid, and the Greenhouse Model. We also intend to develop a policy brief based on the discussions during the policy breakout session of the convening.

Conclusion

In our research for this project, we have discovered that there are foundational issues with nursing homes, and with how we as a nation have built our system of care for older adults. We believe that right now offers an opportunity to shift our models of care in ways that better support older adults living with frailty and chronic disease, that better support the front line staff in these facilities, that lead to better outcomes regarding quality measures, and that also provide a system that is better suited to respond to infectious outbreaks when they occur. The nursing home infections and deaths are community health issues; a response that is limited to increasing surveillance via infection control practices and increasing punishments for violations will be insufficient and likely to result in perverse incentives. A systems level solution is necessary for long term scale and impact, and to better the lives of both those who live and those who work in nursing homes.

Additional Information

Primary Needs

General needs for older adults

1. Need to alleviate social isolation
    - Independent risk factor for poor chronic health outcomes, mortality (post-stroke admission, post-stroke care, MI, CVD, etc.)[60,61], as well as mental health[62]
    - Chronic loneliness drives decreased healthcare utilization[63]
    - Immigrants / non-English speaking older adults at higher isolation risk[64]
2. Need for chronic medical care[65]
    - Medicare does not support long-term hospitalization/chronic care models[66]
    - Unmet needs for prescription drugs across SES[67]
    - Nursing homes put older adults at risk of respiratory illnesses, isolation, abuse
    - Managing complex health issues is particularly challenging in older women, racial minorities, indigenous populations, persons with cognitive impairment, and patients with low SES due to impaired access/complex living conditions[68,69,70]
3. Need for improved understanding of cognitive decline
    - Targeted advertising, e.g. Prevagen lawsuit;[71] Elder Abuse Prevention and Prosecution Act (protects against financial exploitation)[72]
    - Cognitive decline associated with increased risk of elder self-neglect, abuse[73,74]
    - Limited treatments for PD, Alzheimer's, dementia + cognitive decline[75]
4. Address housing inequality in older adults[76]

[60] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6015408/
[61] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5056369/
[62] https://www.ncbi.nlm.nih.gov/pubmed/31910981?dopt=Abstract
[63] https://www.ncbi.nlm.nih.gov/pubmed/25790413?dopt=Abstract
[64] https://www.winona.edu/socialwork/media/hossen_2012.pdf
[65] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0190852
[66] https://www.healthaffairs.org/doi/full/10.1377/hlthaff.W3.37
[67] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4344691/
[68] https://www.ncbi.nlm.nih.gov/pubmed/25408181?dopt=Abstract
[69] https://www.hindawi.com/journals/jar/2015/393761/
[70] https://www.hindawi.com/journals/jar/2015/393761/
[71] https://www.aarp.org/politics-society/advocacy/info-2019/prevagen-lawsuit.html
[72] https://www.ftc.gov/system/files/documents/reports/protecting-older-consumers-2017-2018-report-congress-federal-trade-commission/protecting_older_consumers_-_ftc_report_10-18-18.pdf
[73] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3059228/
[74] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237103/
[75] https://jamanetwork.com/journals/jamaneurology/fullarticle/787339
[76] https://www.jchs.harvard.edu/housing-americas-older-adults-2019

- Income inequality compounds with age, influences mortality, social networks, chronic health outcomes, housing status, quality of life[77,78]
- White-minority gaps in home ownership compound with age[79]
- Homelessness + poor access to medical care for American Indian elders[80]

5. Address food insecurity associated with housing, chronic disease management, low SES, limited mobility, and social isolation[81]

<u>COVID-19 specific needs</u>

1. Roughly one fifth of US COVID-19 deaths occurred in nursing homes[82]
    - Nursing homes not structurally equipped to contain infectious spread, particularly for respiratory tract infections[83,84]
    - Need: increased staffing, support for stay-at-home policies for staff, decrease staff cross-contamination between facilities, protective equipment + hand sanitizer; adherence to droplet, contact, eye precautions; infectious disease control + increased testing at at-risk sites[85]
2. Social isolation is further exacerbated
    - Fewer at-home helpers; quarantine limits visits from caregivers and loved ones
    - Reliance on technology to combat isolation less accessible to older population[86]
    - Family decision-making about elders' health in many cultures disrupted by quarantine measures in hospitals
    - Increased food insecurity for isolated older adults[87]
    - Need: models to quantify social isolation and identify at-risk older adults; virtual social support networks for older adults[88]; community-organized teams to provide meals, resources to isolated older adults; technology training
3. Various comorbidities + complex health conditions
    - 85.6% of 65yo+ have 1+ chronic health conditions; 56% have 2+[89]
    - 70-75% of 60-79yo have CVD, and they are vulnerable to COVID-19 because[90]:
        - Cytokine storm can drive hypotension, sudden drop in cardiac output in patients whose contractility is already compromised
        - V/Q mismatch in alveoli can reduce oxygen supply to myocardium
        - Fever + infection can drive increased oxygen demand

[77] https://www.asaging.org/blog/increasing-inequality-affecting-older-adults-housing-options
[78] https://www.nytimes.com/2015/10/13/health/income-inequality-grows-with-age-and-shapes-later-years.html
[79] https://www.jchs.harvard.edu/housing-americas-older-adults-2019
[80] https://www.ncbi.nlm.nih.gov/books/NBK233097/
[81] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6052142/
[82] https://www.nytimes.com/2020/04/17/us/coronavirus-nursing-homes.html
[83] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3526889/
[84] https://academic.oup.com/cid/article/36/7/870/318878
[85] https://www.cebm.net/covid-19/how-can-pandemic-spreads-be-contained-in-care-homes/
[86] https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30061-X/fulltext
[87] https://www.brookings.edu/blog/the-avenue/2020/03/16/for-millions-of-low-income-seniors-coronavirus-is-a-food-security-issue/
[88] https://journal.ahima.org/covid-19-and-social-isolation-puts-elderly-at-risk-for-loneliness/
[89] https://www.cdc.gov/nchs/health_policy/adult_chronic_conditions.htm
[90] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2797320/

    - Supply-demand mismatches can unmask asymptomatic atherosclerotic plaque buildup, which has typically progressed further in older patients
    - COVID-19 can infect myocardium/pericardium directly[91]
- 14.2% of 65+yo have COPD, and they are vulnerable to COVID-19 because:[92]
    - Reduced lung elasticity poses risks for mechanical ventilation
    - Inflammation can further reduce elasticity and increase airway resistance
    - ARDS from infection further exacerbated by prior emphysema[93]
- 22-33% of 65+yo have diabetes, and they are vulnerable to COVID-19 because:[94]
    - Pro-inflammatory state, weakened immune response
    - Glucose-rich environment could increase viral proliferation
- Reduced immune function, and they are vulnerable to COVID-19 because:
    - Greater susceptibility to virus + increased likelihood of cytokine storm
    - Vaccination strategies rely on (1) stimulating body to produce neutralizing antibodies to prevent virus from entering cells and (2) stimulating T-cells to target infected cells, which are valuable + greatly improve protection for the population but may not be as accessible to immunocompromised patients, who will rely on others being vaccinated [95]
- Need: better chronic care for comorbidities; infectious disease control at vulnerable sites with older populations (nursing homes, etc.)

4. Mortality in older patients with chronic health conditions even without infection because of reduced ER use, COVID-19 related treatment delays[96]
    - Need: more comprehensive quarantine plans distributed to public which include when to access medical care; continued public education on chronic health conditions even during pandemic
5. Many hospital systems have developed rationing policies that allocate ventilators based on age (BWH, Weill, etc.)- younger patients prioritized over older patients[97,98]
    - Narrative that death of older patients is "expected" and "unsurprising" reflects cultural disregard/devaluing of older patients which we don't see as strongly in many other countries (Japan, South Korea, etc.)
    - Narrative that COVID-19 only affects older patients impaired early social distancing efforts in younger population[99]
    - Ethical standards can compromise trust with older patients[100][xlii]
    - Need: broader conversations in ethics about value we assign to older adult life

[91] https://hms.harvard.edu/news/coronavirus-heart
[92] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3297767/
[93] https://www.ncbi.nlm.nih.gov/pubmed/32293753
[94] https://care.diabetesjournals.org/content/35/12/2650
[95] https://science.sciencemag.org/content/368/6486/14?intcmp=trendmd-sci
[96] https://www.nytimes.com/2020/04/20/health/treatment-delays-coronavirus.html
[97] https://www.statnews.com/2020/04/14/coronavirus-who-gets-last-ventilator-hospital-ponders-unthinkable/
[98] https://www.thehastingscenter.org/why-i-support-age-related-rationing-of-ventilators-for-covid-19-patients/
[99] https://www.citylab.com/equity/2020/03/coronavirus-vunerable-elderly-adults-ageism-younger-people/608224/
[100] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4344691/

LTC Funding

An estimated $366.0 billion was spent on long-term services and supports (LTSS) in 2016, making up 12.9% of all personal health expenditures. Of this total, 70.3% comes from public sources (42.2% from Medicaid, 21.8% from Medicare, 6.3% from elsewhere), and 29.7% comes from private sources (15.6% out of pocket, 7.5% from private insurance, 6.5% from elsewhere).[101] Although Medicare is responsible for a significant share of payments for nursing homes and other long-term services, its coverage functions differently than other payers. Medicare is not intended to be a primary payer for long-term care, and its payments are largely used for acute and post-acute care, which might occur in a long-term care facility. Medicare will pay for a nursing home's services for a maximum of 100 days, and the average Medicare covered stay is only 22 days.[102] When post-acute care is not considered, Medicaid funding jumps up to an estimated 54% of LTSS expenditures.[103]

Looking solely at expenditures going to nursing care facilities and continuing care retirement communities, the estimated total amount spent was $168.5 billion in 2018. Of this, Medicaid paid for 29.6%, Medicare for 22.6%, out of pocket payments for 26.6%, and private insurance for 10.1%.[104] However, as mentioned, much of this Medicare spending is for post-acute care over short-term stays; among residents staying at nursing homes for longer than 100 days, the share of funding coming from Medicaid would be significantly higher.

Long-term care (LTC) insurance is not widespread, covering only about 11% of elderly adults. The wealthy are more likely to have private coverage, although their coverage rates are still not particularly high; as of 2014, among seniors with at least $1 million dollars in household wealth, 25% had LTC insurance, while among those with $100,000 to $500,000 in household wealth, 8% had LTC insurance.[105] In addition, the LTC insurance market is shrinking, with 372,000 new policies sold in 2004, compared to under 70,000 policies sold in 2017. Additionally, the number of insurers selling LTC insurance policies has diminished from over 100 to around a dozen. The decline in market competition has allowed premiums to increase, with average monthly rates increasing from $1,071 in 1990 to $2,772 in 2015.[106] Fewer than 0.5% of employers offer LTC insurance,[107] and many people are hesitant to purchase LTC insurance due to worries about the solvency of insurers, a low estimation of their future needs, and incorrect beliefs that Medicare or private health insurance will pay for this care.[108] A further concern is that unlike in health insurance, underwriting is allowed in LTC insurance, meaning underlying conditions or prior genetic tests could impact one's ability to purchase a

[101] https://fas.org/sgp/crs/misc/IF10343.pdf
[102] https://longtermcare.acl.gov/the-basics/who-pays-for-long-term-care.html
[103] https://fas.org/sgp/crs/misc/IF10343.pdf
[104] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical
[105] https://www.urban.org/research/publication/who-covered-private-long-term-care-insurance
[106] https://content.naic.org/sites/default/files/inline-files/2019_CIPR_LTCI%20Brief.pdf
[107] https://content.naic.org/sites/default/files/inline-files/cipr_current_study_160519_ltc_insurance.pdf
[108] https://www.healthaffairs.org/doi/10.1377/hlthaff.2011.1307

policy.[109] It has been estimated that among the general population, 40% of people would have their application for LTC insurance rejected due to underwriting.[110]

With LTC insurance not being widespread, and with Medicare not covering most LTC, residents are left to either pay out of pocket or to turn to Medicaid. To become eligible for Medicaid, residents must have low income and must have low savings, meaning many must "spend down" their existing resources.[111] Although Medicaid is the primary payer for about 62% of residents,[112] its payment rates are often not enough to cover the true cost of care. Rates vary across states, but the average national daily rate paid by Medicaid is $206, while for Medicare it is $503, and for private payors it is $257.[113] It is estimated that Medicaid payments to nursing homes are on average $22.46 below actual costs per patient day,[114] and the Massachusetts Senior Care Association claims that the average facility in Massachusetts loses almost $1 million per year caring for Medicaid recipients.[115]

Medicaid funding methodology varies by state due to the high level of autonomy states have in deciding how much Medicaid pays, what it covers, and who is eligible. Funding comes from both the state and the federal governments, with the federal government matching state spending according to a certain Federal Medical Assistance Percentage (ie. with an FMAP of 50%, the federal government contributes $1 for every $1 the state contributes). Different states have different FMAPs depending on their income per capita, with FMAPs currently ranging from 50% to 78%.[116] However, the Trump administration has recently launched a new initiative called the "Healthy Adult Opportunity" for states to opt into. This initiative, targeting nonmandatory populations, would give states more flexibility in terms of who will be eligible for coverage and what services will be covered, and it sets a cap on federal funding.[117] This initiative is thus similar to a block grant and is meant to decrease spending, which brings risks of providing inadequate coverage and being unable to adapt to deal with crises.

Regarding Medicaid payment methods, states have a good deal of autonomy to set their own rules. States generally pay a per diem rate to nursing homes either retrospectively, based on costs of services used, or prospectively, based on expected patient needs. States adjust their base payment rates with a variety of adjustments and incentives. States will commonly adjust for patient acuity, using a system of case-mixing to categorize patients into a particular group. Up until recently, the CMS has used the Resource Utilization Group-Version 4 (RUG-IV) classification system to categorize patients, although this is in the process of changing. RUG-IV uses information from the Minimum Data Set to classify patients largely based on the volume of services they use, which the CMS feels could incentivize nursing facilities to provide

[109] https://ghr.nlm.nih.gov/primer/dtcgenetictesting/dtcinsurancerisk
[110] https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1133
[111] https://ldi.upenn.edu/sites/default/files/pdf/LDI%20Issue%20Brief%202019%20Vol.%2023%20No.%201_7_0.pdf
[112] https://www.kff.org/infographic/medicaids-role-in-nursing-home-care/
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[116] https://www.nejm.org/doi/full/10.1056/NEJMp2007124
[117] https://www.kff.org/medicaid/issue-brief/implications-of-cmss-new-healthy-adult-opportunity-demonstrations-for-medicaid/

more services than necessary. The CMS is shifting support to the new Patient Driven Payment Model (PDPM), in which patients are classified based on their own individual characteristics, rather than the volume of services used. However, due to the time it might take to shift to the new categorization system, the CMS has created the Optional State Assessment adapter program, allowing Medicaid programs to continue using the RUG-IV indefinitely, until they are ready to implement PDPM.[118]

Medicaid

Medicaid is the biggest funder of nursing care facilities and continuing retirement communities, providing about 30% of total reimbursements. In terms of the number of residents, Medicaid has an even greater role, acting as the primary payor for over 60% of residents. Medicaid payment rates don't pay nursing homes enough to cover the cost of care, with Medicaid payments to nursing homes being an estimated average $22.46 below actual costs per patient day. The Massachusetts Senior Care Association has estimated that in Massachusetts, the average facility loses almost $1 million per year caring for Medicaid recipients.

With Medicaid often underpaying nursing homes, nursing homes that rely heavily on Medicaid will have fewer funds to devote to care, which is likely to reduce care quality. One study found that Medicaid payment rates are positively related to improved care quality, in terms of reductions in activities of daily living decline, pressure ulcer incidence, and the use of physical restraints. Poorer quality of care can in turn lead to increased hospitalization. Evidence has suggested that higher Medicaid payment rates to nursing homes can decrease the odds of hospitalization by 5% for each $10 above the national average payment rate. Marginalized populations, more likely to be on Medicaid, would benefit most from these reduced hospitalizations. A study found that nursing homes with high concentrations of Black residents have 20% higher odds of resident hospitalization than nursing homes with no Black residents; increasing Medicaid rates by $10 reduced the odds of hospitalization of white residents by 4%, while simultaneously reducing the odds by 22% for Black residents.

Medicaid funding methods can also impact hospitalization rates through the implementation of bed-hold policies. Bed-hold policies entail the payor continuing to pay the nursing home for a resident's bed while they are hospitalized, essentially reserving it until they return. The goal of such programs is to provide residents a continuous place of residency, and to ensure residents don't refuse hospitalization for fear of losing their spot. Bed-hold policies do indeed seem to affect hospitalization rates, with nursing homes in states with bed-hold policies having 36% higher odds of resident hospitalization. At the same time, however, bed-hold payment policies must not be so generous that they provide perverse incentives to hospitalize residents excessively. In a similar vein, Medicaid and Medicare payment policies should not be so unbalanced that they incentivize "boomerang" hospitalizations, with which nursing homes can take advantage of Medicare's more post-acute payments.

[118] https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/SNFPPS/PDPM

Staffing, too, can suffer from inadequate Medicaid payment rates. Higher staff to patient ratios are clearly desirable, with higher staffing levels being associated with higher quality care. However, the percentage of facilities' beds being used by Medicaid patients has been found to be negatively associated with the staff to patient ratio. Additionally, evidence suggests that nursing homes will reduce staffing in response to lower payment rates and increase it in response to higher rates. It could, however, take a large funding increase to adequately improve staffing - the cost of increasing Medicaid rates enough to meet minimum staffing standards is an estimated $1.8-$7.9 billion.

Medicaid payments are also related to a facility's capacity for culture change. A study examining three dimensions of culture change (physical environment, staff empowerment, and resident-centered care) found that a $10 increase in Medicaid rates was significantly associated with higher physical environment scores. States with pay-for-performance (P4P) Medicaid models, which grant extra payments to incentivize high quality care, were also associated with higher levels of culture change. Nursing homes in states with P4P models that include culture change performance measures performed better in all domains, while those in states with P4P models without culture change measures performed better in physical environment and staff empowerment domains. This evidence would suggest that payment models have a significant impact on a nursing home's likelihood to successfully implement culture change, with higher Medicaid reimbursement and P4P programs having the potential to promote it.

Low Medicaid payment rates may also act as a barrier to receiving admission into a nursing home. Residents paying through Medicaid may be less desirable to nursing homes than those paying privately or through Medicare, as Medicaid will provide them with less funding. In theory, facilities are prohibited from turning away residents on these grounds. Residents cannot legally be required to waive their rights to Medicaid benefits, and they cannot enter into any contracts requiring private payment for the duration of their stay. Despite these rules, there is some reason to suspect that nursing homes show bias against admitting Medicaid patients, with one study finding that potential residents on Medicaid have a significantly greater chance of being waitlisted than those not on Medicaid. Nursing homes aim to meet non-Medicaid demand before turning to Medicaid patients to fill remaining space; such a thought process dehumanizes residents, framing them more as a monetary investment than a person. With Black Americans making up a disproportionate segment of Medicaid enrollees, such practices create barriers that reinforce structural racism in the healthcare system.

Medicaid creates de facto "tiers" of nursing home quality. As has been discussed, low Medicaid payments are related to several structural problems with nursing homes that affect resident care. Facilities with the highest concentrations of Medicaid patients will naturally be the worst affected by funding shortfalls, and their lack of resources often forces them into a lower tier. These nursing homes disproportionally provide care for low-income residents and tend to be concentrated in the poorest areas; they also disproportionately provide care for minority residents, with a study reporting that 9% of white residents and 40% of Black

residents reside in "low tier" nursing homes. This set of nursing homes are also more likely to serve residents with psychiatric conditions or a history of cognitive deficits, which can lead the facility to be negatively stereotyped, further increasing the difficulty of attracting residents. "Low tier" nursing homes with high Medicaid reliance tend to have fewer staff, go through more frequent changes in ownership, and have worse quality metrics in terms of the incidence of pressure ulcers, physical restraints, and antipsychotic medications. These poor metrics have the potential to create a negative feedback loop; they lead to a low quality rating from the Center for Medicare & Medicaid Services, which drives potential residents away, leaving only the poorest and most vulnerable as customers. In other words, high proportions of Medicaid patients can lead to poor performance, which can in turn lead to the intake of mostly Medicaid patients, and the concomitant problem of recruiting qualified staff for these facilities.

There is no one ideal policy prescription to "fix" Medicaid payments to nursing homes. It is clear that there are problems that need to be addressed- poor Medicaid funding reduces the quality of care, worsens hospitalization and staffing rates, inhibits culture change, and concentrates the most vulnerable residents in the facilities with the fewest resources. These problems have always been present, but the pandemic has shone a light on these shortcomings and made solutions even more imperative; this is especially true for facilities in Black and low-income communities that have the fewest resources and are suffering the most from coronavirus infections. The numbers of infections and fatalities throughout nursing homes have been alarming, and the lack of resources have made some coronavirus guidelines "hollow" and unimplementable. Potential solutions could take a variety of forms, such as implementing P4P funding models, offering implementation training to leaders of low-income facilities, or reforming the private long-term care insurance market. Ultimately, any effort to improve nursing home funding and lift up nursing homes on the "lower tier" will require the significant devotion of public resources and a public acknowledgement of the predicament nursing homes are facing.

Wellness and Wellbeing

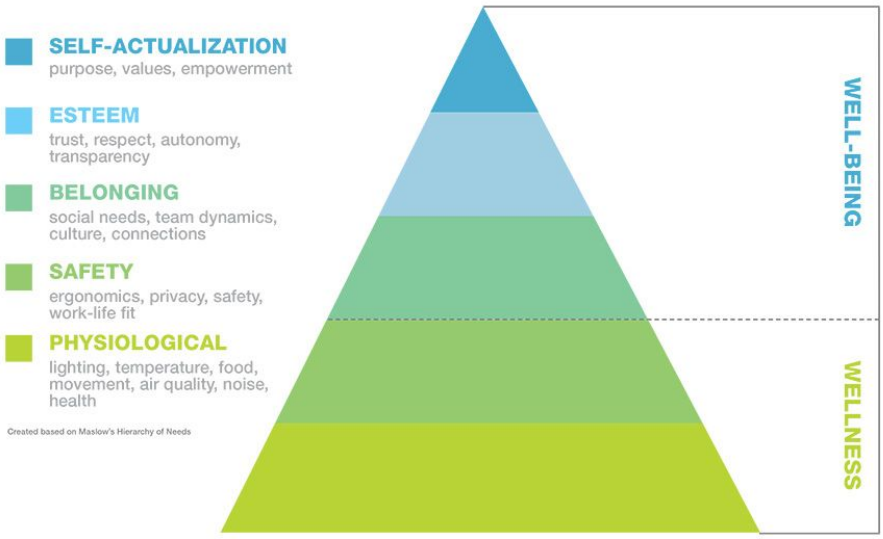
Wellness and wellbeing frameworks can further our understanding of ways to improve quality of life and highlight the importance of a multifaceted approach to care. Traditionally, wellness is defined as "the quality or state of being healthy in body and mind, as a result of deliberate effort" whereas wellbeing is defined as a "good feeling condition of existence or a state characterized by health, happiness, and prosperity"[119]. In essence, wellbeing traditionally refers to a more holistic and whole of life experience, whereas wellness refers to one's general health.

When considering wellness and wellbeing for patients, many point to the humanistic approach outlined by Abraham Maslow[120]. In his theory of Maslow's Hierarchy of Needs, an individual

[119] https://wellbeingmessenger.com/difference-between-wellness-and-wellbeing/

[120] https://www.simplypsychology.org/maslow.html#:~:text=Maslow's%20hierarchy%20of%20needs%20is,attend%20to%20needs%20higher%20up.

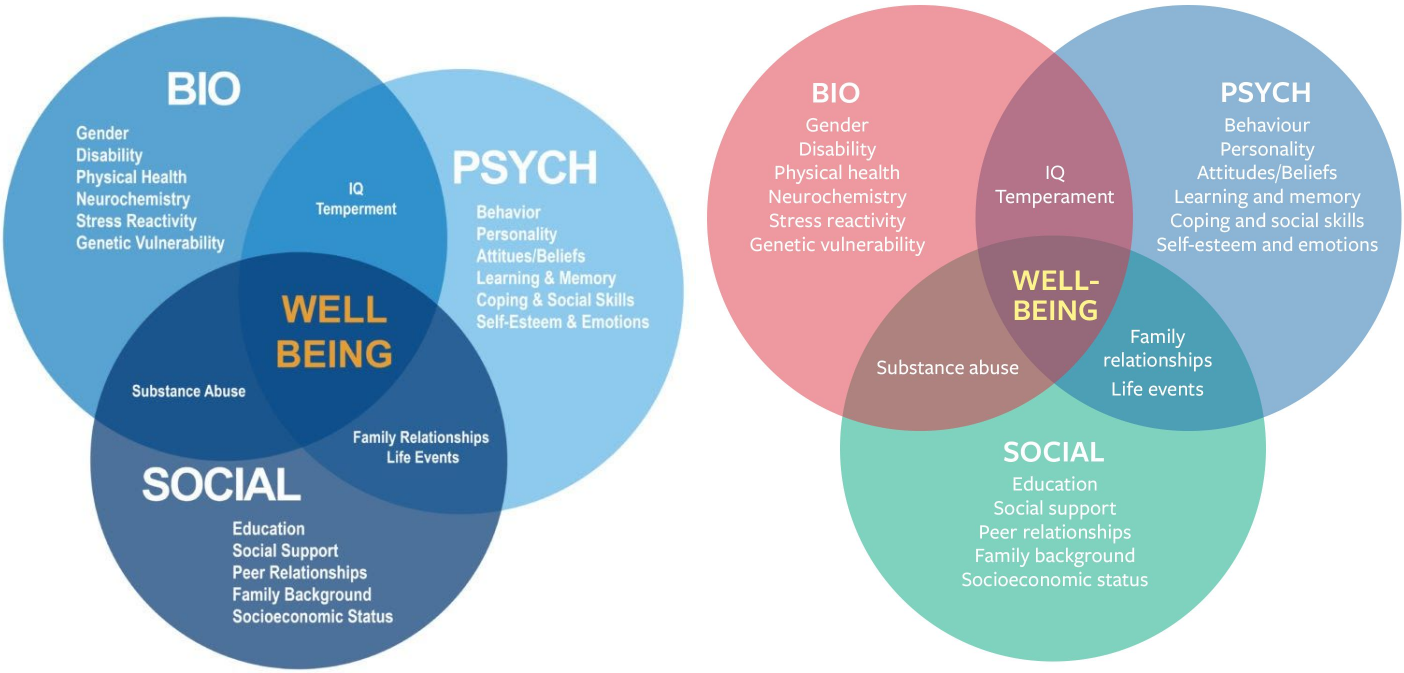
achieves and strives toward self-actualization by firstly fulfilling his basic, primitive physical and social needs. In other words, wellness and wellbeing is only achievable in a stepwise fashion, only after a patient has his "basic" needs supplied in some manner.



Maslow's hierarchy rests on several key assumptions in regards to how to approach wellbeing and wellness for an individual. Firstly, it rests on the idea that patients must strive toward self-actualization in a stepwise and linear fashion, and that they cannot progress or simultaneous work on these different areas of their life concurrently. This means that patients cannot achieve a sense of belonging without having satisfied and achieved their need for safety first. Critics have noted that when operating under this assumption may actually harm patient recovery and treatment, as it assumes that not all of these parts can be worked toward simultaneously. Therefore, it reduces the complexity of patient wellbeing to their needs and basic desires, which can cause treatment to be overwhelmingly emphasized on fulfilling physiological meanwhile neglecting factors most important to patients. Medical

treatment and approaches targets the survival of the individual before fulfilling other measures of wellbeing can be refractory to patient wellness, and may not be reflect the reality of life. For example, a homeless person without a home or a family with food insecurity may still feel and benefit from interventions that support their sense of belonging, and this model also does not support the importance of "higher level" values for us as humans. We all know of people who have refused food in the name of autonomy or protest, whether they be political leaders or nursing home residents.

Another commonly used clinical model that is often used to understand an individual's wellness and wellbeing is the biopsychosocial model[121][122], which postulates that a patient's current state rests on the interaction between a person's biological, social, and environmental influences. This model is also used to examine the underlying etiology of a person's health condition, especially those relating to mental health. It's important to note that in conjunction to Maslow's hierarchy of needs, at the heart of both of these models is the individual and their manifestation, response, interaction with these different factors. Therefore, it has been suggested that these models overemphasizes the responsibility and control of the individual for their wellbeing and wellness which can result in patients feeling blamed for their current state.



In responses to these critiques of wellness and wellbeing, there has been a call to reconceptualize wellbeing as a dynamic and interrelational process for everyone. The Full

[121] https://www.hgi.org.uk/news/latest-news/alarming-hijacking-biopsychosocial-model
[122] https://sigmanutrition.com/biopsychosocial/

Frame Initiative underscores this process in their Five Domains of Wellbeing[123] which they conceptualize individual wellbeing as an interplay between these five universal, essential domains: social connectedness, safety, stability, mastery, and meaningful access to relevant resources. Therefore, people move in and out of these domains throughout different stages in their lives, and their decisions and behaviors help shape the direction and trajectory of their overall wellbeing.

One area in which this framework has been proven to be helpful is in contextualizing ways in which social systems can better support the wellbeing of individuals. For example, healthcare systems and elder homes that focus on delivering basic physiological needs may not fully explain how an elder can feel connected, cared, or loved. Employing a broad wellness and wellbeing framework that states with the assumption that wellbeing is a basic, universal need therefore allows care systems to operate beyond the medical silo, but view recovery and health as a relational process that can be shaped and influenced by social stigma, cultural norms, public expectations, and perceptions of others. Additionally, the five domains of wellbeing framework necessitates a further exploration of how individual wellbeing is contingent on collective wellbeing, which warrants initiatives that seek to improve patient wellbeing to also include measures to improve the wellbeing of care providers, informal caregivers, family, friends, and other persons that are significant to the patient.

Teamwork in Healthcare

The healthcare industry depends on effective teamwork in order to deliver high-quality patient care. Issues within medical teams can lead to disastrous consequences, as 70% of all

[123]http://fullframeinitiative.org/wp-content/uploads/2011/05/Five-Domains-of-Wellbeing-Overview.pdf

medical errors are due to poor teamwork and communication.[124] However, teams can also create vast benefits to improve clinical care by combining a greater knowledge base to execute tasks more effectively.[125] Healthcare teams vary across the following three major dimensions: 1) Temporal Stability: the history of working together in the past and expectation for the future, 2) Skill differentiation: the specialized knowledge of each team member, and 3) Authority structure: how decision-making responsibilities are distributed across the team.[126-127]

In the medical literature, there has been a strong emphasis on creating efficient interdisciplinary teams. These team models are characterized by greater interdependence and shared goals, in favor of taking a strictly multidisciplinary stance, where members maintain discipline-specific roles.[128] These models seek to deemphasize traditional hierarchical structures in favor of encouraging nurses to enter leadership roles and engaging them in the patient decision-making process.

For example, one novel development has been the hospital unit-based leadership model, where each medical unit is run by a dyad of medical directors and nurse managers. This dyad can also be further supplemented with educational specialists or quality/safety managers.[129] This model is associated with improvements in nurse–physician interactions, patient satisfaction, and staff turnover.[130] In Belgium, a study of a flatter nurse hierarchy showed both the benefits and challenges of staff empowerment.[131] Nurses preferred to be involved in issues relating to patient care and less for hospital internal policies. However, a lack of sufficient time to take initiative was a major barrier. This experiment showed that individuals must be given proper time and incentives, in addition, must be provided leadership roles that suit both their knowledge and interest base. Finally, the University of Kentucky has adopted an innovative program in their hospitals called the Interprofessional Teamwork Innovation Model (ITIM).[132] With the ITIM, all members of the care delivery team round on the patients, including the physicians, nurses, case managers, social workers, pharmacists, and nurse facilitators. This approach has been shown to be linked with reduced 30-day same-hospital readmissions.[133]

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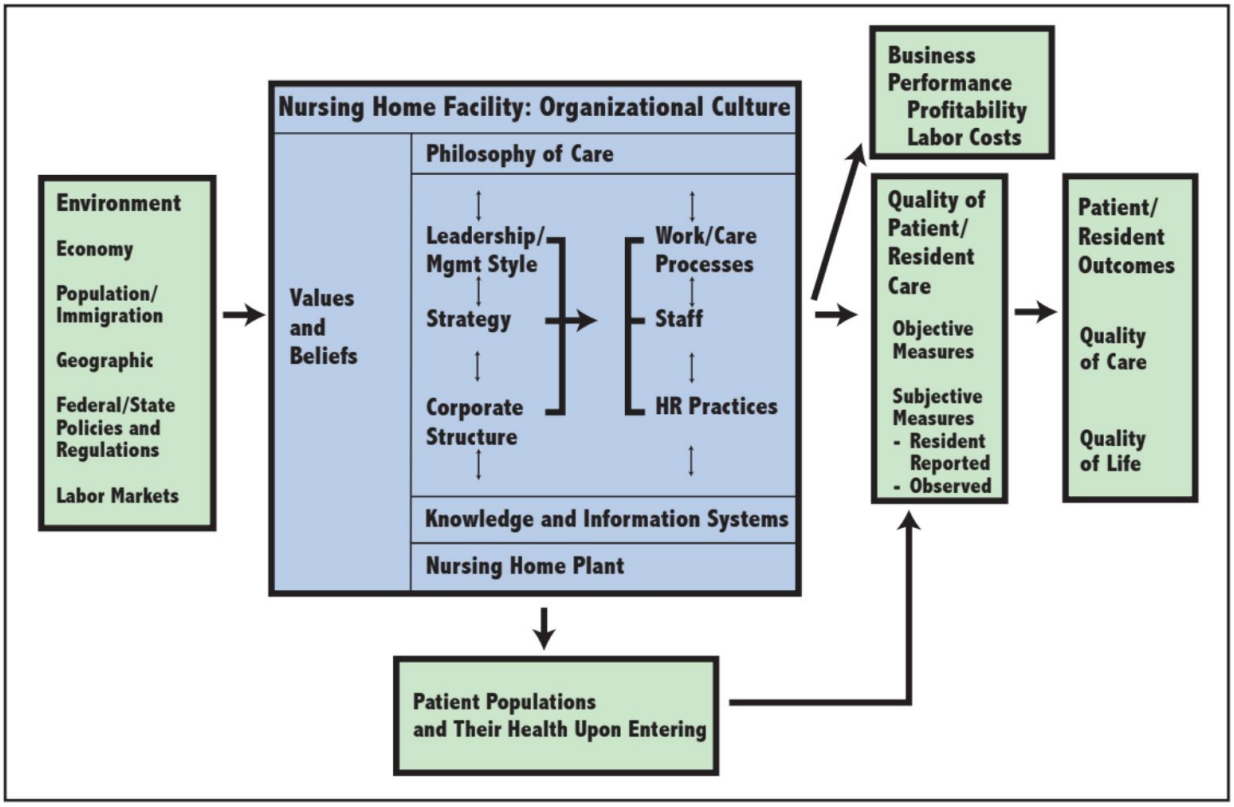
ECCLI Program[134]

The Nursing Home Quality Initiative was enacted by the legislature in 2000, a $50 million initiative meant to improve the quality of care to older adults and disabled individuals by addressing retention issues with the skilled direct care workforce. One of the key components was the Extended Care Career Ladders Initiative (ECCLI), with the goal being to intend quality of care. The framework below demonstrates how ECCLI fits within the larger vision of improving nursing home quality.

Figure 4: Theoretical Framework for Nursing Home Quality[2]



The framework has been developed by Navjeet Singh and Johan Uvin, based upon the following: Dr. Susan Eaton's proposed "Model of nursing home quality" on p.609 in Beyond 'unloving care': linking human resource management and patient care quality in nursing homes, Int. J. of Human Resource Management 11:3 June 2000, pp591-616; The Baldridge Health Care Criteria for Performance Excellence, 2003, with a description on Page 5-6 Input from ECCLI staff at Commonwealth Corporation and from John Morris and Richard Jones of the Hebrew Rehabilitation Center for the Aged

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