California Association of Long Term Care Medicine
Promoting quality patient care through medical leadership and education

Policy Brief

Leveraging the HCAI Healthcare Payments Database to Improve Nursing Home Value and Transparency in California

March 2024

CALTCM
California Association of Long Term Care Medicine

The goals of the California Department of Health Care Access and Information (HCAI) Healthcare Payments Database (HPD) and the Office of Health Care Affordability (OHCA) cannot be met without focusing attention on California's nursing homes.

There is a broader case to be made for focusing attention on the health care and health status of California's total older adult population, but the financial costs and quality variation in nursing homes provide compelling reasons for developing HCAI's nursing home portfolio first.

It should be emphasized that caring and dedicated people are found every day in every nursing home. That said, this is a troubled sector of our healthcare delivery system. Data and analyses by HCAI/OHCA could yield evidence to support interventions across the entire healthcare continuum that would result in better nursing home care and potential savings for both the Medi-Cal program and the state's total healthcare spend. The evidence could drive hospitals, health plans, medical groups, and other stakeholders to take increasing responsibility for the quality and costs of care provided in nursing homes.

The arguments below presume some familiarity with nursing home payments and populations. The underlying issues are discussed at length in *The National Imperative to Improve Nursing Home Quality*, the most recent comprehensive report from the National Academies of Sciences, Engineering, and Medicine (NASEM). Short-stay, post-acute residents are most often covered by Medicare Part A or Medicare Advantage. Long-stay, custodial residents are most often covered by Medi-Cal; their professional fees are most often paid by Medicare Part B, thus yielding the "Medi-Medi" or "duals" designation. Reimbursement for post-acute residents is considerably higher than Medi-Cal reimbursement for long-stay custodial residents, which can be lower than the nursing home's average daily cost. While nursing facilities have always cared for residents with dementia and other cognitive impairments that may entail difficult behaviors, they have increasingly been asked to care for long-stay custodial residents with serious mental illness, substance use, and behavioral issues. These issues, together with racial/ethnic socioeconomic disparities, have led to de facto segregation across nursing homes. The NASEM report points out that this segregation contributes to poorer outcomes.

Regardless of the challenges, some nursing homes perform better than others. Datasets from the Centers for Medicare and Medicaid (CMS) are invaluable but incomplete. Leveraging HCAI's datasets – and in particular, the unparalleled richness of Healthcare Payments Database – will help illuminate the variation in quality and the financial underpinnings of this variation. The HCAI nursing home portfolio should begin by addressing the lacunae left by CMS:

- Who goes into which nursing homes?
- Who are the physicians, nurse practitioners, and physician assistants delivering the professional care? Who are the medical directors?
- What is the reach of behavioral health practitioners?
- How is variation in quality outcomes tied to variation in these determinants?

This brief was prepared by Terry Hill, MD, FACP, for the California Association of Long-Term Care Medicine (CALTCM), the professional organization for California physicians, medical directors, nurses, pharmacists, administrators, and other professionals working in long-term care. CALTCM is the state affiliate of the Post-Acute and Long-Term Care Medical Association (formerly AMDA: The Society for Post-Acute and Long-Term Care Medicine). CALTCM was the sponsor of AB 749, chaptered in 2021 as Health and Safety Code § 1261.4, which requires training and certification of nursing home medical directors.

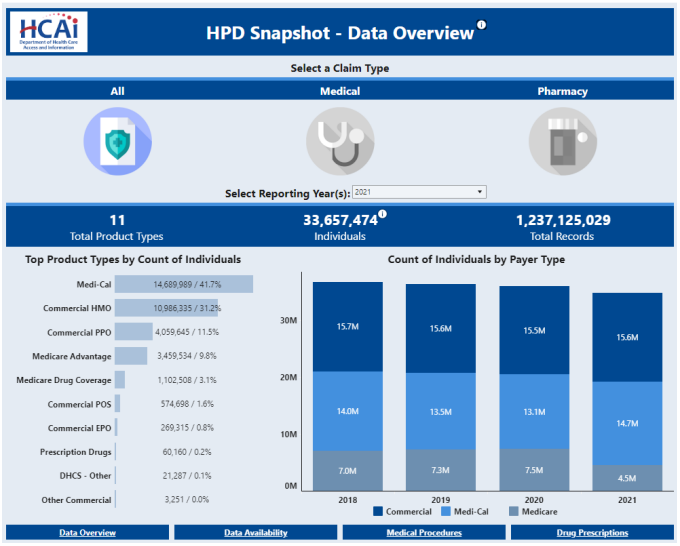
A. Introduction to HCAI's HPD and OHCA

The California Department of Health Care Access and Information (HCAI) encompasses multiple divisions whose responsibilities include healthcare seismic safety, loan insurance for nonprofit facilities, health workforce development, scholarships, and loan repayments. The department is a leader in healthcare analytics, which is our concern here.

1. Healthcare Payments Database (HPD)

The Healthcare Payments Database (HPD) is a large research database of healthcare administrative data based on four core file types:

- Medical claims and encounters
- Pharmacy claims
- Member eligibility
- Provider directory



The HPD currently contains 2018-2022 data from:

- Commercial and Medicare Advantage health plans and insurers
- Department of Health Care Services (Medi-Cal managed care and fee-for-service)
- Centers for Medicare and Medicaid Services (Medicare fee-for-service)

HCAI began posting first looks at the HPD data in 2023:

- Healthcare Payments Data (HPD) Snapshot: Data Overview
- HPD Measures: Health Conditions, Utilization, and Demographics

HCAI's goals for the HPD (which also serve as criteria for prioritizing projects) are to:

1. Provide public benefit for Californians and the state while protecting consumer privacy.
2. Increase transparency about health care costs, utilization, quality, and equity.
3. Inform policy decisions on topics including the provision of quality health care, improving public health, reducing disparities, advancing health coverage, reducing health care costs, and oversight of the health care system and health care companies.
4. Support the development of approaches, services and programs that deliver health care that is cost effective, responsive to the needs of Californians, and recognizes the diversity of California and the impacts of social determinants of health.
5. Support a sustainable health care system and more equitable access to affordable and quality health care for all.
6. Learn about and seek to improve public health, population health, social determinants of health, and the health care system, not about individual patients.

2. Office of Health Care Affordability (OHCA)

California established the Office of Health Care Affordability (OHCA) in 2022 to address the state's health care costs and affordability. It has three primary responsibilities:

1. Slow health care spending growth
2. Promote high value system performance, and
3. Assess market consolidation.

OHCA's board consists of the California Health and Human Services Secretary, CalPERS Chief Health Director, four appointees from Governor's Office, and one appointee each from Assembly and Senate. OHCA recognizes that it is in the public interest that all Californians receive health care that is accessible, affordable, equitable, high-quality, and universal.

OHCA's system performance monitoring duties are to:

- Track quality, equity, and access;
- Set benchmarks and report on primary care and behavioral health investment;
- Set goals for the adoption of alternative payment models and report on progress; and
- Promote workforce stability.

B. Rationale for Focusing on Nursing Homes

1. Financial Rationale

Nationally, Medicare Part A covers only 12% of nursing home residents, whereas Medicaid covers 62%.[1] At any given time, about 97,000 people reside in California nursing homes. Although this figure represents only 0.2% of the state's population, nursing homes consume a vastly disproportionate portion of California's healthcare costs, as shown in the table below.

	Population	Total Health Expenditures (millions)	Medicare (millions)	Medicaid (millions)
California	39,368,000	$ 405,451	$ 86,833	$ 87,062
Nursing Homes	97,190	$ 18,452	$ 4,950	$ 4,707
Nursing Home %	0.2%	4.6%	5.7%	5.4%

[1] National Academies of Sciences, Engineering, and Medicine 2022. The National Imperative to Improve Nursing Home Quality: Honoring Our Commitment to Residents, Families, and Staff. Washington, DC: The National Academies Press. https://doi.org/10.17226/26526.

In response to the onset of COVID-19, total U.S. nursing home spend decreased by 7.8% in 2021 but then rebounded by 5.6% in 2022.[2] The California Legislative Analyst has projected a 12.2% increase in Medi-Cal in 2023-24, from $135 billion to $152 billion.

Beyond these direct onsite costs, nursing home residents generate large numbers of emergency department visits and hospital admissions. For nearly two decades, CMS has been concerned about the high numbers of avoidable ED visits and hospitalizations from nursing homes. Given the wide variation in performance, CMS developed nursing home quality measures for ED visits and hospitalizations. The following table reflects California's statewide performance and facility-to-facility variation in the CMS October 2023 data release.

CMS Claims-Based Quality Measures	California	Variation
Percentage of short stay residents who were rehospitalized after a nursing home admission	22%	0 – 61%
Percentage of short stay residents who had an outpatient emergency department visit	11%	0 – 37%
Number of hospitalizations per 1000 long-stay resident days	2.0	0 – 9.4
Number of outpatient emergency department visits per 1000 long-stay resident days	1.0	0 – 6.4

CMS also developed a 30-day episode-based measure of Medicare spending that encompasses the 3 days prior to hospital admission through 30 days after discharge. A study using 2015 Medicare fee-for-service (FFS) data found that the hospital stay was responsible for 53% of episode costs and the 30-day post-acute interval was responsible for 44% of episode costs. The costs of the inpatient days were similar across hospitals, reflecting long-standing cost-reduction pressures. On the other hand, there was wide cost variation and opportunity for savings in post-acute care.[3] HCAI data can reveal this variation and the potential for new interventions.

HCAI data could also support expansion of California's small Assisted Living Waiver program, which offers nursing home residents the option of moving to less expensive and less restrictive sites of care.

2. Transparency Rationale

Nursing homes were ground zero for the explosion of private equity investment in healthcare. A recent review of private equity investment in healthcare found cost increases to be the most consistent impact of these investments across all healthcare settings.[4]

[2] Hartman M, Martin AB, Whittle L, Catlin A; National Health Expenditure Accounts Team. National Health Care Spending In 2022: Growth Similar to Prepandemic Rates. Health Aff (Millwood). 2023 Dec 13:101377hlthaff202301360.
[3] Das A, Norton EC, Miller DC, Chen LM. Association of Postdischarge Spending and Performance on New Episode-Based Spending Measure. JAMA Intern Med. 2016 Jan;176(1):117-9
[4] Borsa A, Bejarano G, Ellen M, Bruch JD. Evaluating Trends in Private Equity Ownership and Impacts on Health Outcomes, Costs, and Quality: Systematic Review. BMJ. 2023 Jul 19;382:e075244.

What is unique about nursing homes is the prevalence of complex, multi-tier ownership hierarchies that usually split property ownership and facility operations into different companies beneath an ultimate corporate control. In addition to contracting at inflated prices with various "related parties" such as therapy and food services, nursing home operators usually rent from the nursing home property owner, often from real estate investment trusts (REITs) under the control of the ultimate corporate owner. A report commissioned by the California Attorney General regarding the Providence Group, Inc., for example, found that after Providence purchased Plum Healthcare Group, the rent paid by a sample of 11 Plum facilities increased from 2.4% to 9.6% of expenses. Two of the Plum facilities were already paying annual rents in excess of $1,000,000; the other nine had been paying an average of only $185,695 but saw these rents multiply dramatically following the acquisition.

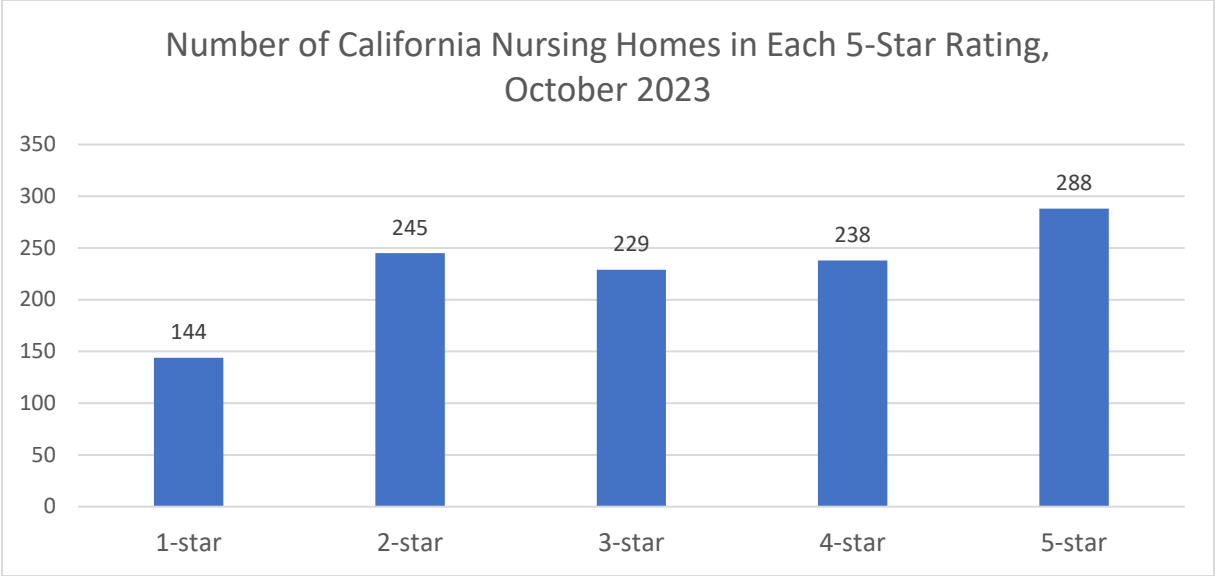
Investments by real estate investment trusts have had variable effects on nursing home staffing levels.[5] California Senate Bill No. 650, chaptered in 2021, now requires that nursing homes file an annual consolidated financial report including data from all operating entities, license holders, and related parties and that HCAI certify and post these reports. These reports are supposed to fill a critical gap in our knowledge. The Government Accounting Office has repeatedly criticized the Medicare cost reports, which are unaudited and which allow nursing homes to "conceal profit in management fees, lease agreements, interest payments to owners, and purchases from related-party organizations."[6] California's Medi-Cal nursing home cost reports are also unaudited and have often been available years late.

In spite of pandemic-related decreases in census in 2020, a recent study of California nursing homes found that "average net income profit margins increased from $324,936 in 2019 to $713,219 in 2020."[7] There was wide variation of profit margins across facilities. Like other variations in performance, this financial variation is of interest to stakeholders.

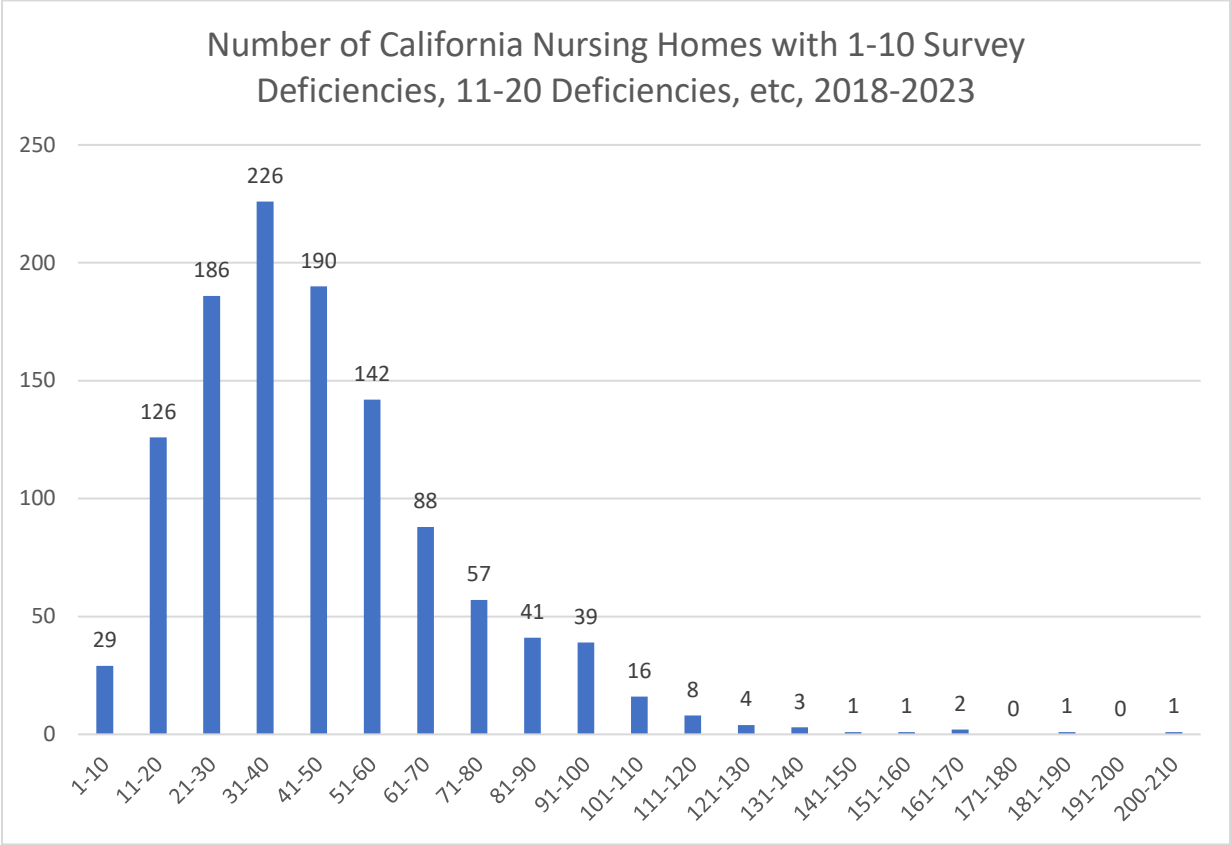
3. Quality Rationale

Nursing homes are notable for their wide variation in quality. The CMS 5-Star rating system is designed to smooth out this distribution via a simplification that is useful but unintentionally deceptive. In the following graph of October 2023 5-Star data for California facilities, four of the quintiles appear to be of similar size, but this similarity belies the underlying variation.

[5] Braun RT, Williams D, Stevenson DG, Casalino LP, Jung HY, Fernandez R, Unruh MA. The Role of Real Estate Investment Trusts in Staffing US Nursing Homes. Health Aff (Millwood). 2023 Feb;42(2):207-216.
[6] Skilled Nursing Facilities. CMS Should Improve Accessibility and Reliability of Expenditure Data. Washington, DC, United States Government Accountability Office. 2016. https://www.gao.gov/products/gao-16-700
[7] Harrington CA, Hailer L, Mollot RJ, Mukamel DB. Examining California Nursing Home Profitability and Related Factors Before and During The COVID-19 Pandemic. J Am Geriatr Soc. 2023 Aug;71(8):2530-2538.



The number of deficiencies received from CMS and CDPH on-site surveyors, which comprise one component of the 5-Star rating, yields a more revealing distribution. The following graph from the same dataset shows that 29 California facilities (2.5%) received close to zero deficiencies over the past five years, while most others received considerably more. One nursing home received 209 deficiencies in this five-year period.



As noted above, caring and dedicated staff are found in every nursing home, but from a public policy perspective it is critical to recognize that there is more quality variation in nursing homes than in most other healthcare sectors. While there continues to be policy debate about the precise staffing levels needed, there is no longer debate about the critical importance of nurse staffing and the variation in quality. As noted in the NASEM report, "The COVID-19 pandemic 'lifted the veil,' revealing and amplifying long-existing shortcomings in nursing home care such as inadequate staffing levels, poor infection control, failures in oversight and regulation, and deficiencies that result in actual patient harm." There is less widespread recognition that when a person transfers from hospital to nursing home, the RN-to-patient ratio may go from 1-to-5 to 1-to-60, the requirement for physician visits may go from daily to monthly, and the CMS-defined "social work" workforce need have no social work training. In addition, the nursing homes filled with long-stay Medi-Cal residents are vastly under-resourced compared with those that have large numbers of post-acute residents.

There is more quality variation in nursing homes than in most other healthcare sectors.

Finally, this variation in quality is in part due to variation in corporate ethics. Problematic management practices are not uncommon among nursing home owners and operators. In June 2023 California's largest nursing home operator, Rockport, settled a lawsuit brought by the U.S. Department of Justice and the California Department of Justice alleging that Rockport paid kickbacks to physician medical directors for patient referrals. Similarly, in November 2023 another California nursing home owner settled a suit brought by the U.S. Department of Justice alleging that the owner paid medical directors in proportion to the number of their expected referrals. Forthcoming is a settlement with Mariner Health of a lawsuit brought by the California Department of Justice and four county district attorneys alleging that Mariner understaffed its nursing homes and subjected its patients to negligent care.

4. Equity Rationale

"Facilities with higher proportions of Medicaid residents are often under-resourced, understaffed, and located in poor and minority communities."

The National Imperative to Improve Nursing Home Quality, NASEM's 2022 report, emphasized "the lack of robust data specific to race and ethnicity in nursing homes" due to privacy-related data constraints, particularly for the multiple smaller racial/ethnic populations typical in California. Nevertheless, the report summarized a robust literature regarding racial and socioeconomic disparities that have created de facto segregation among nursing homes: "Facilities with higher proportions of Medicaid residents are often under-resourced, understaffed, and located in poor and minority communities." Dual eligible beneficiaries and Black beneficiaries are more likely to be discharged from hospitals to nursing homes with fewer staff and lower star ratings. The report also notes that "nursing homes with more residents with

serious mental illness are more likely to have lower star ratings, lower direct care staffing, and for-profit ownership than all other nursing homes." Subpopulations with high levels of unmet needs include those with serious mental illness and those lacking fluency in English.

As of March 2021, California's Medicare population has a higher percentage of enrollees who are dually eligible for Medi-Cal (22.4%) than the national average (18.0%), including 55% of Hispanic Medicare beneficiaries, 41% of Asian beneficiaries, 34% of Black beneficiaries, and 15% of White beneficiaries.

"A mostly immigrant, mostly female workforce cares for a resident population that is mostly poor people of color."

A study linking early Alameda County COVID-19 infection data and death certificates documented a hierarchy of wealth and socioeconomic status across the continuum of long-term care facility types. Residents in assisted living, which is largely private pay, are far more likely to be White, to have bachelor's degrees, and to be born in the United States than residents in nursing homes, where Medi-Cal is the primary payer for most long-term residents. Regarding the long-term care workforce, the study concluded, "Of the 12 COVID-19 deaths among staff, all were people of color, 10 were Asian immigrants, and 10 were unlicensed.... For our SNFs in particular, a mostly immigrant, mostly female workforce cares for a resident population that is mostly poor people of color."[8]

Studies have documented dramatic racial disparities in well-being within the direct care workforce, and these disparities have implications for care quality.[9] For nursing homes in particular, the gradual increase of foreign-born direct care workers accelerated sharply in 2021.[10] The needs of this workforce are obscured by the lack of disaggregated data on race and ethnicity.[11]

C. HCAI's Data Resources

1. Hospital Data Pertinent to Nursing Homes

HCAI has a long history of publishing public data products regarding hospital characteristics and quality, e.g., Where Did Patients Come From, How Long Did They Stay, Where Did They Go and Why Were They There? HCAI's rich hospital files, however, have yet to be tapped for post-acute and long-term care insights. For example, HCAI posts a hospital file which reveals that Alta Bates

[8] Hill TE, Farrell DJ. COVID-19 Across the Landscape of Long-Term Care in Alameda County: Heterogeneity and Disparities. Gerontol Geriatr Med. 2022 Jan 14;8:23337214211073419.
[9] Muench U, Spetz J, Jura M, Harrington C. Racial Disparities in Financial Security, Work and Leisure Activities, and Quality of Life Among the Direct Care Workforce. Gerontologist. 2021 Aug 13;61(6):838-850.
[10] Jun H, Grabowski DC. Nursing Home Staffing: Share Of Immigrant Certified Nursing Assistants Grew As US-Born Staff Numbers Fell, 2010-21. Health Aff (Millwood). 2024 Jan;43(1):108-117.
[11] Oronce CIA, Adia AC, Ponce NA. US Health Care Relies on Filipinxs While Ignoring Their Health Needs: Disguised Disparities and the COVID-19 Pandemic. JAMA Health Forum. 2021 Jul 2;2(7):e211489.

Summit Medical Center discharged 1,517 patients (14.6% of total discharges) to nursing homes in 2022. This factoid is not in itself interesting, but multiple stakeholders would be interested in other views of this dataset, such as the numbers and characteristics (e.g., duals vs non-duals, race/ethnicity, diagnoses) of the patients sent to which nursing home, broken down by health plan. Hospitals tend to discharge duals to low-quality facilities, and a California study found that Medicare Advantage plans have lower-quality nursing homes in their network, apparently because they contract primarily on price.[12] In addition to a pivot table centered on hospitals, a pivot table for these same data but centered on nursing homes would be revelatory.

It is far easier for hospitals to keep nursing homes, with their financial challenges, endemically poor care and stigma, at arm's length.

Policymakers, healthcare executives, and consumers would welcome more transparency regarding hospital-nursing home relationships, which have gone through multiple transitions over time. For example, multiple Bay Area hospitals in the 1980s participated in a wave of vertical integration, acquiring home health agencies and nursing homes.[13] They soon divested those nursing homes, however, and eventually all Alameda County hospitals except Alameda Health System even closed their onsite, "distinct-part" post-acute care units. It is far easier for hospitals to keep nursing homes, with their financial challenges, endemically poor care and stigma, at arm's length. In the 2010s, the combination of bundled payments, accountable care contracts, and readmission penalties triggered only modest efforts by hospitals to improve care in their "preferred" post-acute care facilities. A national survey found that only a minority of nursing homes enjoyed shared clinicians, care coordinators, or shared quality/safety activities with their referring hospitals, and only 7% were formally integrated into the hospital system.[14] With some admirable exceptions, e.g., in Contra Costa County,[15] assistance from hospitals remained modest even during the first years of the pandemic, when COVID-19 devastated resource-poor nursing homes.

2. Nursing Home Datasets

HCAI already produces useful nursing home datasets. The "Long-term Care Facilities Annual Utilization Data" includes self-reported information regarding capacity, admissions, payer source, capital/equipment expenditures, and the December 31st resident census with demographic data, including race and ethnicity.

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[12] Graham C, Ross L, Bueno EB, Harrington C. Assessing the Quality of Nursing Homes in Managed Care Organizations: Integrating LTSS for Dually Eligible Beneficiaries. Inquiry. 2018 Jan-Dec;55:46958018800090.
[13] Alta Bates Hospital acquired as many as eight nursing facilities. Kaiser Permanente later purchased one facility but is unlikely to do so again. For background, see Scott WR et al. Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care. University of Chicago press; 2000.
[14] Burke RE, Phelan J, Cross D, Werner RM, Adler-Milstein J. Integration Activities Between Hospitals and Skilled Nursing Facilities: A National Survey. J Am Med Dir Assoc. 2021 Dec;22(12):2565-2570.e4.
[15] Hill TE, Ahn T, Rozen R, Greaves J. Hospital-Based Nurses Help Mitigate COVID-19 in Nursing Homes. GeriPal Blog, 2020. https://geripal.org/hospital-based-nurses-covid19-nursing-home.

With the passage of AB 1953 (2018), HCAI began collecting "related party" information. This effort toward financial transparency is now expanding following the passage of SB 650 (2021). The "Long-Term Care Facility Financial Data" will include annual consolidated financial statements for the nursing home and related entities, as well as the organization's structure. Posting of these data is to begin in 2024.

3. The HPD Contents

The HPD, California's All Payer Claims Database (APCD) represents a vast expansion of HCAI's capabilities. Authorized in 2018, the HPD has progressed through planning, development, and data acquisition, with its first products appearing on-line in June 2023. Like other states' APCDs, California uses the APCD Common Data Layout (APCD-CDL™) to capture member eligibility, provider information, medical claims and encounters, pharmacy claims, and dental claims. Because of the managed care preponderance in California, encounter data in addition to fee-for-service (FFS) claims are critical to understanding our healthcare system. The HPD includes most commercial insurers, Covered California, Medicaid FFS, Managed Medi-Cal, Medicare FFS and Medicare Advantage. Plans are underway to include non-claims data such as per-member-per-month population payments, performance incentives, shared savings, and pharmacy rebates, all of which are necessary for quantifying the total cost of care.

As noted in HCAI's 2020 report to the legislature, California's HPD is "one of the largest research databases of its kind," dwarfing other states' APCDs. The June 2023 release of data on enrollment, medical procedures and pharmacy prescriptions comprised 6,075,893,321 records from 2018 through 2021 for over 35,000,000 individuals. The November release tallied chronic condition prevalence across California counties. This release did not include Medicare FFS claims, but HCAI does have these 2018-2022 data from CMS.

4. The HPD as Corrective to CMS Medicare Data

In addition to its unique size, HCAI's HPD is unique in that it covers a state that is remarkable for the diversity of its cultures and languages. Furthermore, the HPD can serve to correct for a critical weakness in the CMS Medicare dataset, which includes only Medicare FFS data, not Medicare Advantage, which covers over half of California's Medicare enrollees. For its 5-Star rating system in nursing homes, CMS has begun using claims-based quality measures – ED visits and hospital admissions – because of the "gaming" that plagues measures based on the Minimum Data Set.[16] These claims-based quality measures, however, along with much of the research on nursing homes, are based on only FFS nursing home residents, who may vary in important ways from managed care residents.

[16] Davila H, Shippee TP, Park YS, Brauner D, Werner RM, Konetzka RT. Inside the Black Box of Improving on Nursing Home Quality Measures. Med Care Res Rev. 2021 Dec;78(6):758-770.

5. Access to HPD Data

As noted above, HCAI has already begun to post de-identified, aggregate datasets on its website. More datasets will appear in 2024, and HCAI will also develop a process for releasing custom de-identified, aggregate datasets upon request.

Access to confidential data will depend upon whether the data have direct patient identifiers, whether the dataset requested is standardized versus custom, whether analysis will occur within HCAI's secure data enclave versus outside the enclave, and whether the dataset request serves to meet the HPD goals listed above.

The full value of the HPD will only be realized when its data are linked to other datasets. HCAI itself will begin by linking the HPD records to vital statistics data. Such linkage already happens on an annual basis in California between the Department of Public Health's vital records and the Department of Healthcare Services' Medi-Cal data, using a combination of probabilistic and deterministic methods.[17]

6. CMS Restrictions on Use of HPD Data

California will need to find political and/or practical solutions so that Medicare FFS can be included in analyses, else a large portion of the HPD's value will be wasted.

As of March 2024, CMS has maintained that analysis of Medicare FFS data within California's HPD can be done only by HCAI staff at the request of state agencies, not by outside researchers. Even HCAI's first release of de-identified, aggregate data on health conditions by county was lacking Medicare FFS data. HCAI can share the Medicare FFS data with other state agencies, but such transfer would not permit researcher access.

Dataset guardians are understandably selective about which data elements they release, if any, but the CMS policy regarding APCDs appears to vary across states. Colorado researchers, for example, have accessed Medicare pharmacy data from their APCD in a study of alternatives to high-cost generics.[18] Colorado's cancer registry, on the other hand, is quite restrictive by statute. In order to enhance the registry's value, the state department of public health partnered with the state's APCD to create a minimally identifiable linked dataset for researchers that has yielded multiple research papers.[19]

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[17] Predmore Z, Heins S, Hoch E, Baxi S, Grigorescu V, Smith S. State Experiences Linking Medicaid Data with Birth Certificates and Other Data Sources. Med Care. 2023 Jun 1;61(6):353-359.
[18] Socal MP, Cordeiro T, Anderson GF, Bai G. Estimating Savings Opportunities from Therapeutic Substitutions of High-Cost Generic Medications. JAMA Netw Open. 2022 Nov 1;5(11):e2239868.
[19] Arend J. Linking the All-Payers Claims Database (APCD) to the Colorado Central Cancer Registry: An Evaluation. J Registry Manag. 2022 Spring;49(1):35-36.

Given the enormous role of older adults and Medicare FFS in the total healthcare spend, California will need to find political and/or practical solutions so that Medicare FFS can be included in analyses, else a large portion of the HPD's value will be wasted. A recent CMS Request for Information regarding researcher data access may represent a stakeholder opportunity to influence the current restrictions.

D. Data in Service of Improving Quality, Lowering Costs

1. Pertinent Research Using APCDs

The following examples from other states illustrate some of the clinical and financial concerns that APCD data can address in the nursing home context.

- Colorado APCD data linked to the state's cancer registry revealed racial disparities in cancer treatment and hospice use among cancer patients discharged from hospital to nursing home.[20]
- Pennsylvania APCD data and vital statistics showed no harm as the post-acute setting for joint replacement patients shifted from nursing facility to home.[21]
- De-identified Virginia APCD data revealed "gaming" of the anti-psychotic use quality measure in nursing homes, along with dramatic disparities in anti-psychotic prescribing for African-American residents and male residents.[22]
- Rhode Island APCD data revealed large increases in nurse practitioner and psychiatrist Medicaid managed care billing (20% and 27%, respectively) from 2016 to 2019. The authors found that professional billing was a valid proxy for the state's total health spend, and they argue that professional spend information is well-suited for health system monitoring, evaluation, and policy development.[23]

2. Pressing Issues for HCAI and OHCA

a. Nursing Home Professional Services

The CMS nursing home datasets have been a gold mine for revealing variation in quality across nursing homes, but they offer no information on the performance of the professional provider

[20] Singh S, Molina E, Perraillon M, Fischer SM. Post-Acute Care Outcomes of Cancer Patients <65 Reveal Disparities in Care Near the End of Life. J Palliat Med. 2023 Aug;26(8):1081-1089.
[21] Burke RE, Canamucio A, Medvedeva E, Hume EL, Navathe AS. Association of Discharge to Home vs Institutional Postacute Care With Outcomes After Lower Extremity Joint Replacement. JAMA Netw Open. 2020 Oct 1;3(10):e2022382.
[22] Winter JD, Kerns JW, Winter KM, Richards A, Sabo RT. Community, Social, and Facility Factors and Long-stay Antipsychotic Use. Clin Gerontol. 2022 Oct-Dec;45(5):1180-1188.
[23] Philips AP, Lee Y, James HO, Lucht J, Wilson IB. How All-Payer Claims Databases (APCDs) Can be Used to Examine Changes in Professional Spending: Experience from the Rhode Island APCD. R I Med J (2013). 2023 Aug 1;106(7):50-57.

workforce or even who comprises this professional workforce, and research using Medicare FFS claims is limited by the lack of managed care data. The HPD can begin to remedy these deficits for California. Claims-based studies show that over half of the physicians and nurse practitioners now providing nursing home care work essentially full-time in this setting.[24,25] Once these providers (sometimes termed SNFists) are identified, claims can yield an array of indicators, including hospital readmissions,[26] antipsychotic prescribing, antibiotic prescribing, and polypharmacy.[27] Claims can readily show whether providers evaluate newly-admitted nursing home residents in a timely fashion. Linked to the date of death, claims can yield quality indicators such as the rates of emergency department visits, hospital admissions, and chemotherapy use at the end of life.[28] Claims can also indicate hospital-nursing home linkages; nursing homes that share providers with hospitals appear to have better outcomes.[29] A study comparing SNFists to non-nursing home physicians found that SNFists were older, more likely to be in solo practice, and more likely to be foreign trained.[30]

b. Nursing Home Medical Direction

Medical directors play a critical leadership role in nursing homes, and one study found that medical director certification predicts higher quality.[31] CMS requires that each nursing home have a medical director, but as noted in the 2022 NASEM report, CMS has no data on the medical directors' certification status, medical specialty, geriatric or medical director training, age, number of patients served, or time spent in the nursing homes.

CMS has no data on the medical directors' certification status, medical specialty, geriatric or medical director training, age, number of patients served, or time spent in the nursing homes.

California's AB 749, chaptered in 2021 as Health and Safety Code § 1261.4, required that nursing homes report the name and certification status of their medical directors to the California Department of Public Health in 2022 and that all medical directors be certified by

[24] Goodwin JS, Agrawal P, Li S, Raji M, Kuo YF. Growth of Physicians and Nurse Practitioners Practicing Full Time in Nursing Homes. J Am Med Dir Assoc. 2021 Dec;22(12):2534-2539.e6.
[25] Kim S, Ryskina KL, Jung HY. Use of Clinicians Who Focus on Nursing Home Care Among US Nursing Homes and Unplanned Rehospitalization. JAMA Netw Open. 2023 Jun 1;6(6):e2318265.
[26] Ibid.
[27] Mulhall CL, Lam JMC, Rich PS, Dobell LG, Greenberg A. Enhancing Quality Care in Ontario Long-Term Care Homes Through Audit and Feedback for Physicians. J Am Med Dir Assoc. 2020 Mar;21(3):420-425.
[28] Hill TE, Jarbouai C, Robbins N, Johnston V, Calton B. Novel Data Linkage for Quality Improvement in Palliative and End-of-Life Care. J Pain Symptom Manage. 2020 Apr;59(4):e2-e3.
[29] White EM, Kosar CM, Rahman M, Mor V. Trends in Hospitals and Skilled Nursing Facilities Sharing Medical Providers, 2008-16. Health Aff (Millwood). 2020 Aug;39(8):1312-1320.
[30] Jung HY, Qian Y, Katz PR, Casalino LP. The Characteristics of Physicians Who Primarily Practice in Nursing Homes. J Am Med Dir Assoc. 2021 Feb;22(2):468-469.e1.
[31] Rowland FN, Cowles M, Dickstein C, Katz PR. Impact of Medical Director Certification on Nursing Home Quality of Care. J Am Med Dir Assoc. 2009 Jul;10(6):431-5.

January 1, 2027. At the present time, only about half of California's nursing homes have complied with reporting the certification status of their medical directors. As noted above (section B.3., Quality Rationale), there is wide variation in nursing home quality. Similarly, there is wide variation in the competency and conscientiousness of nursing home medical directors, ranging from those who are highly trained and certified to those who collude in illegal management practices. HPD data linked to the Department of Public Health's list of medical directors will yield a wealth of information that is now unavailable.

Transparency regarding who is providing professional services to nursing home residents and who is filling the medical director role is of significant public interest. Policymakers, healthcare executives, and consumers are likely to find this information to be actionable, with implications that are consequential for California's population health and costs.

c. The Evolution of CalAIM

In 2023, California transitioned almost all its dual eligibles into managed care. Medi-Cal managed care plans are required to authorize and cover nursing home services. The plans are also required to implement quality monitoring and quality improvement efforts. Unfortunately, Medi-Cal managed care plans have typically contracted with nursing homes on the basis of price, not quality,[32] and they have little to no experience promoting quality in nursing homes.

This integration of nursing homes into the Medi-Cal managed care plans' purview has the potential to improve the well-being of their enrollee population and to save costs, but there is also significant risk of floundering. HCAI could provide information about nursing homes and about the professional services there that would greatly increase the chances of improving care and decreasing costs.

d. Behavioral Health

Nearly a third of Los Angeles County nursing home residents had serious mental illness.

The younger nursing home population with serious mental illness continues to grow, and only four states have a higher percentage of nursing home residents with schizophrenia or bipolar disorder than California.[33] A recent journalistic analysis found that nearly a third of Los Angeles County nursing home residents had serious mental illness.[34] This influx amounts to a "back-door institutionalization" that challenges ill-equipped nursing home staff and shortchanges care for

[32] Graham, op cit.
[33] Laws MB, Beeman A, Haigh S, Wilson IB, Shield RR. Prevalence of Serious Mental Illness and Under 65 Population in Nursing Homes Continues to Grow. J Am Med Dir Assoc. 2022 Jul;23(7):1262-1263.
[34] Yu E, Gawthrop E. California Nursing Homes Are Becoming "De Facto Mental Health Centers." LAist and APM Research Lab, Sep 20, 2023. https://laist.com/news/specials/mental-illness-nursing-homes-california-what-we-found

both the residents with serious mental illness and the other residents. Substance use and traumatic brain injury are among the factors that can complicate care for this younger population.[35] Hospital referral patterns contribute to the segregation of these residents into lower quality nursing homes.[36, 37] Although some residents with serious mental illness need nursing home level of care, researchers point to housing and community-based services as cost-effective alternatives for the majority.[38, 39]

E. Recommendations

In 2024, HCAI should begin developing an initial portfolio of products focused on nursing homes as one of California's healthcare settings with the most variation in quality and the most financial waste. Embedded above are a number of ideas that could help HCAI and the OHCA meet their overall goals regarding quality, cost, transparency, and equity for the benefit of Californians. Meeting these HPD goals – for all healthcare sectors including nursing homes – will require implementation of HCAI's HPD funding plan.

Exactly what form this portfolio of products will take will depend upon the outcomes of negotiations with CMS regarding the use of Medicare FFS data. Analysis and linkages to other datasets may be done internally, as with the current collaboration of state departments to link Medi-Cal data with vital statistics. HCAI may need to pursue creative workarounds, as Colorado has done with its state-academic partnership for cancer data. The CMS Request for Information may signal a potential shift in policy. The only unacceptable course is leaving the HPD's Medicare FFS out of analyses that are important for achieving the HPD goals.

Meeting these goals will also require the expertise and resources of the academic research community. It is possible that negotiations with CMS will delay full researcher access to the Medicare FFS data. Regardless, HCAI should proceed with creating standardized datasets on nursing homes and publishing de-identified aggregate products. These datasets should contain pertinent linkages and should be updated annually.

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[35] Laws, op cit.
[36] Jester DJ, Hyer K, Bowblis JR. Quality Concerns in Nursing Homes That Serve Large Proportions of Residents with Serious Mental Illness. Gerontologist. 2020 Sep 15;60(7):1312-1321.
[37] McGarry BE, Joyce NR, McGuire TG, Mitchell SL, Bartels SJ, Grabowski DC. Association between High Proportions of Seriously Mentally Ill Nursing Home Residents and the Quality of Resident Care. J Am Geriatr Soc. 2019 Nov;67(11):2346-2352.
[38] Latimer EA, Rabouin D, Cao Z, Ly A, Powell G, Adair CE, Sareen J, Somers JM, Stergiopoulos V, Pinto AD, Moodie EEM, Veldhuizen SR; At Home/Chez Soi Investigators. Cost-effectiveness of Housing First Intervention with Intensive Case Management Compared with Treatment as Usual for Homeless Adults With Mental Illness: Secondary Analysis of a Randomized Clinical Trial. JAMA Netw Open. 2019 Aug 2;2(8):e199782.
[39] Nelson M, Bowblis J. A New Group of Long-Stay Medicaid Nursing Home Residents: The Unexpected Trend of Those Under Age 65 Using Nursing Homes in Ohio. Scripps Gerontology Center, 2017. https://sc.lib.miamioh.edu/bitstream/handle/2374.MIA/6176/Nelson-A-New-Group-Medicaid-10-09-2017.pdf

As described above (section C.1., Hospital Data), HCAI publishes revealing hospital products with titles such as "Where Did Patients Come From, How Long Did They Stay, Where Did They Go and Why Were They There?" It is time to do the same for nursing homes.

1. **HCAI should redeploy its hospital data to show which hospitals and which plans send patients to which nursing homes. As with the hospital products, the aggregate, deidentified nursing home products should reveal residents' insurance coverage, diagnoses, and demographics including race and ethnicity.**

The major deficit across the publicly available CMS nursing home datasets is the lack of information about professional services, that is, the physicians, nurse practitioners, and physician assistants who evaluate residents, order tests, pharmaceuticals, and services, and order hospital transfers. The Rhode Island study cited above found that "professional spending is a strong proxy for total spending." As with patient data, these data on professionals must be de-identified and aggregated. HCAI's role is revealing patterns of behavior that are useful for improving care, not identifying behavior of individuals.

2. **Given the dominant role of physicians, nurse practitioners, and physician assistants in nursing home quality and cost, together with the paucity of information about these providers, HCAI should begin by characterizing this professional workforce for each nursing home, the ordering practices of this workforce, the timeliness and frequency of visits as required by regulation, as well as the market concentration of these professional groups.**

The enactment of a law (AB 749, HSC § 1261.4) requiring training and certification for nursing home medical directors was California's effort to address a serious oversight in nursing home regulatory practice. Thus far, we do not know how much the variation in nursing home quality and costs is associated with variation in the quality of medical director practices.

3. **Using the Department of Public Health's roster of medical directors, HCAI should develop annual datasets to monitor the year-to-year impact of HSC § 1261.4 on this critical component of the workforce, including characteristics such as certification status, medical specialty, geriatric or medical director training, age, number of patients served, and time spent in the nursing homes.**

The de facto segregation in nursing homes by race, ethnicity, and socioeconomic status has been well-publicized during the COVID-19 pandemic, although the relative weights of its causes are still poorly understood. HCAI's annual long-term care facilities utilization report is useful but limited, since the data are self-reported and aggregation at the nursing home level prohibits analysis.

4. **HCAI should use the record-level HPD data to develop de-identified standardized datasets on the nursing home population, including age, gender, race/ethnicity, payer source (including plan and dual vs non-dual status), and primary diagnoses.**

The remarkable increase among the nursing home population in serious mental illness, traumatic brain injury, substance use, and homelessness, all generally at younger ages, is posing a major challenge to how the state and nation have organized long-term care. While here again there is variation, there is also consensus that taken overall, these nursing home residents are now poorly served.

5. **HCAI should develop datasets to assess and monitor the clustering of residents with serious mental illness and the reach or absence of behavioral health professionals in nursing homes, including behavioral health nurse practitioners,[40] psychologists, and psychiatrists.**

[40] Richard JV, Huskamp HA, Barnett ML, Busch AB, Mehrotra A. A Methodology for Identifying Behavioral Health Advanced Practice Registered Nurses in Administrative Claims. Health Serv Res. 2022 Aug;57(4):973-978.