### Cal Hospital Compare Board of Directors

December 16, 2020 9:00am Pacific Time Phone: 1-669-900-6833 Access code: 443 789 5416

Webinar link: <u>https://zoom.us/j/4437895416</u>



#### Cal Hospital Compare Board of Directors Meeting Agenda Wednesday, December 16, 2020

9:00am – 11:05am PT

Webinar Information

Webinar link: <u>https://zoom.us/j/4437895416</u>

Phone: 1-669-900-6833

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Time	Agenda Item	Presenters and Documents
9:00-9:05	Welcome and call to order	- Ken Stuart
5 min.	<ul> <li>Approval of past meeting summary</li> </ul>	Board Chair
		- Bruce Spurlock
		Executive Director, CHC
9:05-9:15	Organizational updates	- Bruce Spurlock
10 min.	• Q4 website data refresh – <i>in progress</i>	Executive Director, CHC
	<ul> <li>SNFs &amp; COVID-19 Issue Brief</li> </ul>	
	Honor Roll Announcement	
9:15 – 9:45	Cal Hospital Compare Analytics	- Mahil Senathirajah
30 min.	<ul> <li>Updated CMS data reporting timeline</li> </ul>	Senior Director, IBM Watson
	Proposed 2021 analyses	Health
9:45 - 10:05	Patient Activation Proposal	- Andy Krackov
20 min.		Hillcrest Advisory
10:05-10:15	2021 Maternity Honor Roll Threshold	- Bruce Spurlock Executive
10 min.	New statewide target	Director, CHC
		- Elliott Main
		Medical Director, CMQCC
10:15-11:00	Executive Session	- Bruce Spurlock
45 min.	• 2021 Data Use Fees	Executive Director, CHC
	Financial report	
	Draft budget	
	<ul> <li>Decision on funding principles</li> </ul>	
11:00-11:05	Wrap-up	- Ken Stuart
5 min.	Adjourn	Board Chair
	– Next meeting: Wednesday February 10, 10:00am -	
	12:00pm PST (Zoom Call)	



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#### **Other Contributors**

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#### **Board of Directors**

Page 1 of 1 Revised 10/20



Cal Hospital Compare Board of Directors Meeting Summary Thursday, October 29, 2020 10:00am – 12:00pm PST via Zoom Webinar

**Attendees:** Ash Amarnath, David Hopkins, Libby Hoy, Robert Imhoff, Andy Krackov, Chris Krawczyk, Parker Lewis, Julia Logan, Helen Macfie, Joan Maxwell, Mahil Senathirajah, Bruce Spurlock, Alex Stack, Kristof Stremikis, Ken Stuart, Tracy Fisk

Welcome & call to order• The meeting formally commenced at 10:02am Pacific Time. • The meeting summary of July 9, 2020 was motioned, seconded, and approved as submitted. • The board members and attendees formally introduced themselves.Healthcare Payment Data Program• Upon the program plan passing legislature in June 2020, an advisory committee was formed and will convene quarterly. Ken Stuart serves on this committee. • OSHPD is currently building out the program. Will be capturing ~90 percent of all claims data. The database will include pricing. Board members can send any ideas/recommendations for utilization of data to Ken
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Updates• Q3 2020 website data refresh is complete.
CMS has recently relaxed reporting requirements with the exception of issuing
new guidance on reporting of COVID. Mahil will update the BOD on any
changes to the reporting timeline.
In collaboration with Health and Human Services, the results of the 2020 honor
rolls are scheduled to be announced in December. The BOD will be notified of
any potential time delays regarding the announcement.
Patient Activation•Social media outlets and referrals are the biggest sources for drawing consumers
Proposalto the CHC website.
Alex Stack and Andy Krackov conducted multiple stakeholder interviews. Key
learnings were shared with the BOD including proposed strategies for new
marketing initiatives.
• Strategic partnerships – Libby felt this is the ideal time to move forward with
building new relationships. Libby agreed with Mahil's suggestion to add FQHCs
to the list of providers so that we can support the connection to community. Ken
suggested adding the Healthcare Coalition and Covered CA to the list and
soliciting them for feedback regarding proposed strategies.
• Joan recommended initiating conversations with physicians to gather their input
about what drives patient decisions. Julia mentioned that open enrollment is an
opportune time to network with nospitals and their anniates.
CITC will incorporate bOD recommendations and provide all update at the     Decomber board mosting
Opioid Care Honor  There were 91 participating heapitals (goal was 115) who submitted the 2020
<b>Roll</b> Onioid Management Hespital Solf Assessment by the October <sup>0th</sup> deadline. Alex
reviewed the self-assessment domains and scoring results. The dogrou of

#### Summary of Discussion:



	difficulty increased from last year's assessment. Hospitals who completed the	
	assessment for two consecutive years showed significant progress.	
	• Alex reviewed the proposed threshold – the TAC recommended setting the honor	
	roll threshold at 55 <sup>th</sup> percentile. Ken proposed setting the threshold at 75 <sup>th</sup>	
	percentile for top/honor roll with 50 <sup>th</sup> percentile at bottom or honorable mention.	
	The Board approved of this proposal.	
Long Term Care	<ul> <li>Proposal was submitted to the California Healthcare Foundation.</li> </ul>	
Grant	• Mahil explained the results of the study and associated factors related to COVID	
	cases in SNFs and gave an overview of the finding and recommendations from	
	the LTC Advisory Committee. The Board was very supportive of this work.	
	• CHCF is publishing an issue brief in the next several weeks on CA SNF staffing	
	levels and its relation to COVID cases.	
	• Helen recommended holding an offline discussion to address the sharing of	
	current/refreshed data related to SNFs.	
Financials	• Bruce deferred for discussion and approval at the December meeting.	
Next	• The next Board of Directors meeting is scheduled on December 16, 2020 at 9:00am	
Meeting/Meeting	PST via Zoom. The next meeting will be extended by 30 minutes to 1 hour.	
Adjournment	The meeting formally adjourned at 12:05pm PST.	

### **Proposed Agenda**

- ► Welcome & call to order
- Organizational updates
- Cal Hospital Compare analytics

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- Patient activation proposal
- 2021 Maternity Honor Roll
- Business plan
- Wrap Up

#### Q4 2020 Website Data Refresh In Progress

#### Updated measures include:

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- CMS, CDPH, OSHPD, & maternity measures
- Retired CJRR measures
- No new measures

### CHCF-Funded SNF-Covid Study Released

- Released December 1
- Issue Brief
  - COVID-19 in California's Nursing Homes: Factors Associated with Cases and Deaths
- Sample of early press coverage
  - LA Times: <u>As virus again surges in California, race is a defining factor in nursing facilities, research shows</u>
  - SF Chronicle: <u>Coronavirus cases and deaths soared in nursing homes across California.</u> <u>Here's why</u>
  - KQED 7-minute discussion <u>https://www.kqed.org/news/11849641/surging-coronavirus-more-dangerous-for-nursing-homes-with-black-latino-residents</u>

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Politico California newsletter

### 2020 Honor Roll Reporting Timeline

#### Patient Safety Poor Performers

• May

#### Maternity Honor Roll

• December

#### **Opioid Care Honor Roll**

• December

#### Patient Safety Honor Roll

• January 2021

## Source Press Release w/ CHHS Agency to be published in mid-December

#### Cal Hospital Compare Announces 2019 Honor Rolls

December 13, 2019 Featured, Press Releases

FOR IMMEDIATE RELEASE

DATE: December 13, 2019 CONTACT: (916) 654-3304

### Cal Hospital Compare Analytics

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Proposed 2021 analyses

#### COVID Impacts On CMS Hospital Compare Reporting

CMS Hospital Compare Refresh Dates and Measurement Periods					
Date CMS Hospital Compare Data					
Set Release Date	Most Recent Date of Any Measure that Was/Will Be Refreshed				
End of April, 2020	Received: June 30, 2019				
End of July 2020	Received: Sept 30, 2019				
	Possible: December 31, 2019 but, per CMS guidance of May22, reporting is				
	voluntary. Unclear what CMS will report and make available on CMS Hospital				
	Compare and when. Note that data from other sources (CMQCC, OSHPD, CDPH HAI,				
	breastfeeding likely will come in as usual in Q4 2020, mostly covering measurement				
Uncertain: End of October, 2020	period CY2019).				
	Likely suspended since CMS May 22 guidance indicates that "CMS will not count data				
End of January, 2021	from Jan. 1, 2020 to June 30, 2020"; referencing the measurement period.				
	Likely suspended since CMS May 22 guidance indicates that "CMS will not count data				
End of April, 2021	from Jan. 1, 2020 to June 30, 2020"; referencing the measurement period.				
	Possible resumption of reporting and availability of CMS Hospital Compare.				
	However, given COVIDs impacts are likely to go beyond June 2020, CMS could extend				
End of July 2021	the period for which it "won't count data" to Q3 2020.				

\*On May 22, CMS issued guidance regarding the suspension of CMS Hospital Compare reporting for specific cycles due to COVID

#### Possible CHC Analysis Categories

### Comprehensive Measure Analysis

#### Price Transparency & Value Analysis

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Short Stay SNF Measures & Hospitals

### **Comprehensive Measure Analysis**

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#### **Comprehensive Measure Analysis**

#### Background

- Cal Hospital Compare has history of hospital quality measure rates, going back to 2013
- Scoring methodology uses a relative scale; absolute changes in performance not captured

#### Goal of Comprehensive Measure Analysis

- To examine trends in both the measure set and performance to provide actionable insights
- Review measure set and methodology and consider enhancements to improve consumer reporting

#### **Comprehensive Measures - Proposed Analyses**

In depth examination of Cal Hospital Compare's performance history

- Changes in the measure set over time; migrating from process to outcome measures
- Examine the absolute changes in performance over time
- Examine hospital and/or demographic factors that are associated with the most improved/worsened performance.
  - Hospital size, system ownership, urban vs rural, occupancy, payer mix, financial performance, staffing etc.
  - Could also include sociodemographic information in the hospitals geographic area
- Multivariate regression can be run to more precisely quantify the factors driving both:
  - 1) performance differences across hospitals and
  - > 2) changes in performance over time

#### ..Comprehensive Measures - Proposed Analyses

Modeling of Alternative Cut points for Performance Categorization

- Cal Hospital Compare uses an advanced statistical methodology to establish performance categories (i.e., poor, below average etc.)
- The cut points for the categories were established by Cal Hospital Compare in 2015 as:
  - ▶ 10<sup>th</sup> percentile, 25<sup>th</sup> percentile, 75<sup>th</sup> percentile and 90<sup>th</sup> percentile
- Examine alternative cut points to provide better discrimination of performance
- Examination of Measures Not Currently Reported on Cal Hospital Compare
  - Conduct systematic review of available measures, assess the measures for inclusion (statistical properties, importance to consumers etc.)
  - Measures would include the CMS Hospital Compare outpatient clinical quality, cost, excess days in acute care measures
- Potential to improve value of information to consumers and stakeholders

#### **Comprehensive Measure Analysis Example**

History of Cal Hospital Compare maternity measure reporting - CHC Average



### Price Transparency and Value Analysis



### Price Transparency and Value - Background

- CMS Goal: "Helping to ensure every American knows how much their healthcare will cost in advance and allowing them to make fully informed and value-conscious decisions"
- Hospital Price Transparency Rule: Hospitals must make public their standard charges in two ways
  - Comprehensive Machine-Readable File that contains the following standard charges for services provided by the hospital:
    - sross charges
    - discounted cash prices
    - payer-specific negotiated charges
    - de-identified minimum and maximum negotiated charges
  - Consumer-Friendly List of charges for a limited set of "shoppable services":
    - ▶ 70 CMS-specified shoppable services
    - 230 hospital-selected shoppable services
  - Public Reporting
    - "must be displayed prominently and clearly ... on a publicly available website"

### Price Transparency and Value - Background (cont'd

#### Timeline

- ▶ January 1, 2021
- Data Acquisition/Integration: Pricing data will appear on each hospital's respective site
  - CMS is not creating a central repository of pricing data
  - Work would include obtaining and integrating the machine readable files from hospital websites

#### Price Transparency and Value - Potential Analyses

- The Pricing Transparency Rule: new, potentially influential consumer/stakeholder information on shoppable services
- Goal of Pricing Transparency Analysis
  - Explore data to support consideration of potential, future role in Cal Hospital Compare
  - Assess value to consumers and other stakeholders
  - Understand trends in use of data nationally
  - Explore linkage of pricing information with CHC quality measures to determine if a measure of "value" may be created/displayed
- Important Note: No hospital-specific public reporting of hospital pricing data is envisioned as part of analysis

#### ... Price Transparency and Value - Potential Analyses

#### Descriptive statistics

- Assessment of availability and data quality
- Benchmark and price variation information
- Relationship to hospital characteristics (urban/rural, size, payer mix, financial performance, staffing etc.)
  - Possible multi-variate regression
- Alignment of Price and Quality: Value
  - Identify matches between procedure pricing and quality measures
  - Conduct correlation: association between price and quality?
  - Describe potential methodological approaches for combining and reporting price and quality

#### TAC and Board Roles

- The project team will work iteratively with the TAC and Board to develop and review analyses
- Ultimately, approaches to incorporating price transparency information will be brought forward for TAC and Board deliberation

### Price Transparency and Value - Examples

	Mandatory Price Transparency Services	Cal Hospital Compare Quality Measures
•	Major joint replacement or reattachment of lower extremity without major comorbid conditions or complications (MCC) MRI scan of leg joint Removal of one knee cartilage using an endoscope	<ul> <li>Primary and Revision Hip Surgery Volume</li> <li>Primary and Revision Knee Surgery Volume</li> <li>Rate of readmission after hip/knee surgery</li> <li>Surgical Site Infections - Hip Prosthesis</li> <li>Surgical Site Infections - Knee Prosthesis</li> <li>Hip Fracture Mortality Rate</li> </ul>
•	Routine obstetric care for vaginal delivery after prior cesarean delivery including pre-and post-delivery care	<ul><li>VBAC Rate</li><li>VBAC Routinely Available</li></ul>
•	Routine obstetric care for cesarean delivery, including pre-and post-delivery care	<ul> <li>NTSV C-Section Rate</li> <li>Surgical Site Infections - Cesarean Section</li> </ul>
		19

### Short Stay SNF Measure Analysis



#### Short Stay SNF Measure Analyses

- Background: Understanding SNF performance is relevant to consumers, hospitals and health plans:
  - Consumers impacted by hospital to SNF transfers essential component of continuity of care
  - SNF re-hospitalization and ER rates lead to increases in a hospital readmission rates
  - Hospital discharge planners required to inform patients of SNF quality
- Within context of possible reboot of Cal Quality Compare nursing home website to support consumer needs

### Short Stay SNF Measures\*

- SNF Quality Measures: (<u>Rehospitalization after SNF admission, Outpatient ED visits</u>, Antipsychotic meds given, Pressure Ulcers, Improved ability for residents to move around independently)
- Additional Measures: Discharge (Successful return to community from SNF, <u>potentially</u> preventable hospital readmissions 30 days after SNF discharge)
- Functional Abilities (Functional abilities assessed and functional goals made, Residents at or above ability to care for themselves or move around, Change in residents' ability to care for themselves or move around)
- Flu and Pneumonia Measures (Receive flu shot for current season, Receive vaccine to prevent pneumonia)
- Other (Meds reviewed and received follow-up care if medication issues, Falls with major injury, Medicare spending per beneficiary)

\*Hospital-related SNF short stay measures underlined Complete list of SNF short stay quality measures available in Appendix

#### Short Stay SNF Measures - Potential Analyses

► SNF Variation

- SNF readmission/ER rates across geographical areas
- SNF readmission/ER rates within geographical/hospital "catchment" area
- Hospital Readmission/ER: Identification of SNF organization and resident characteristics that are associated with high rates
  - Possible multi-variate regression analysis
- SNF Profiles: Within geographical/hospital "catchment" area (market share, quality, bed size, ownership, payer mix, etc.)
- SNF Tools: To assist hospital discharge planners (quality, but also staffing levels, etc.)
- SNF Reporting: Development of consumer reporting options for CHC website

#### TAC Feedback on Possible Analyses

- Comprehensive Measure Analysis
  - Option most supported by TAC
  - Most consistent with CHC's core mission and activities
  - Provides potential improvement to consumer information as well as actionable insights to stakeholders
- Price Transparency
  - ► TAC interest in price transparency as an emerging area
  - However, maybe too early; more development/exploratory than immediately actionable, heavier lift
  - Consider again as field unfolds later in 2021
- ► SNF
  - General TAC support for tools/information to support consumer education and decision-making, SNF "shoppable"
  - Somewhat dependent on Board support for reboot of Cal Quality Care
  - Less support for solely SNF-hospital analytics

## Patient Activation Proposal

Bringing Cal Hospital Compare hospital performance data to where patients already are

# Direct to consumer outreach via strategic partnerships

Using this approach, CHC assumes a primary role as a data/score generator that leverages strategic partnerships with organizations who have more intimate and frequent connection with consumers.

Critical to success is:

- Understanding healthcare consumers' online behavior and crafting relevant messages.
- Identifying and developing strategic partnerships with data disseminators that have complimentary choice attributes to CHC information (i.e. MD, cost, network) at both the local and statewide/national level
- Packaging CHC data into easily accessible and distributable products

#### Key Stakeholder Interviews

#### Who We Interviewed:

- Patient advisors: Mary Schramke, Barbara Kivowitz, Joan Maxwell
- Indu Subaiya, founder of Health 2.0
- Scott Christman, chief data officer, CDPH
- Chaeny Emanavin, director of CHHS' office of innovation
- Greg Downing, former head of innovation for HHS (federal)
- ► Stephanie Teleki, CHCF
- Barbara Wentworth, Healthnet
- Ash Amarnath & Thai Lee, Covered California
- Kristi Wagner, Air Conditioning and Refrigeration Trust Fund
- Valerie Cornuelle, California's Valued Trust
- John Stenerson, Self-Insured Schools of California

### Strategic Partnerships



### **Proposed Strategies**



### Marketing Partnerships

- Ready-made collateral that's easy for others to disseminate
  - Patient mailers from health plans
  - Digital "mailers" (e.g., e-mails from health plans)
  - Web advertising partnerships that leverage Facebook, Twitter, Google



Health Net, LLC September 18 at 9:07 AM · 😋

Here's how to check for a low C-section rate when choosing a hospital for delivery. Click here to find a hospital, and then look under the "Mother & Baby" tab: https://bit.ly/3iJ8rwF. #MakingBirthSafer



00 820

4 Comments 8 Shares

...

### Build a Suite of Nicely Designed Widgets to Place on Other Sites

#### View Quality Data for In-Network Hospitals:


# **Key Strategies**

# Marketing Partner

Suite of Widgets

# Proposed Budget & Timeline

### Pilot This Approach in 2021

The pilot could be with Self-Insured Schools of California and/or California's Valued Trust. Meantime, we can continue conversations with Covered California (that partnership may take longer to develop).

### Timeline:

Jan - March:Develop partnershipsApril - June:Development of marketing collateral and widgetJuly - December:Rollout and Evaluation

### ► Budget

Technical Development of Widget:	\$10,000
Ensuring Usability of Widget (Talk to Patients):	\$4,000
Design and Printing of Marketing Collateral:	\$18,000
Development of Partnerships, Project Management:	\$10,000
Development of Partnerships, Project Management:	\$1

#### Total:

\$42,000

# Any Questions for Me?

# Questions We Could Address if We Move Forward:

- Should we offer these widgets at no cost?
- Do you think we should talk with others before formalizing partnerships?
- Any input on who the strategic partners should be?
- ► How would we evaluate if were successful?

# 2021 Maternity Honor Roll

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New statewide target

# New statewide target

Healthy People 2030 has updated their target for reducing cesarean births among low-risk women with no prior births



# Maternity Trends







#### Opioid Care Honor Roll Announcement 2020:

Recognizing California hospitals addressing the opioid epidemic

Cal Hospital Compare (CHC) produces three Hospital Honor Rolls: Maternity Care, based on hospitals hitting a California statewide target of low-risk c-sections, a Patient Safety Honor Roll which utilizes 12 measures as well as performance on the Leapfrog Hospital Safety Grade, and an Opioid Care Honor Roll. We anticipate Secretary Ghaly, with California Health and Human Services Agency, to announce the recipients of the Maternity and Opioid Care Honor Roll programs in December 2020. Due to changes in data reporting the results of the 2020 Patient Safety Honor Roll will be released early 2021. Included in this report is an **embargoed** Opioid Care Honor Roll representing the results from the *2020 Opioid Management Hospital Self-Assessment*. Please do not share this list beyond your organization until after the Secretary's announcement.

#### Background:

To address California's ongoing opioid epidemic, accelerate hospital progress to reduce opioid related deaths, and recognize hospitals for their performance CHC launched the Opioid Care Honor Roll in 2019. 2019 served as a pilot year. All California, adult, acute care hospitals are eligible to participate in this 3-year program.

#### Why the focus on appropriate opioid use? According to the <u>California Opioid Overdose</u> <u>Surveillance Dashboard</u>, over 2,800 Californians died of an opioid-related overdose in 2018. Patients with opioid use disorder are frequently hospitalized or visit the emergency department due to complications of the condition without also receiving treatment for the underlying disease of opioid addiction. This is a missed opportunity and leaves patients untreated and at high risk of future overdose.

To measure appropriate opioid care across all California hospitals, in a standardized way, CHC developed the *Opioid Management Hospital Self-Assessment*.<sup>1</sup> The self-assessment is rooted in evidence-based guidelines and practices, The Joint Commission's pain management standards, and the real-life expertise of our advisory group members.<sup>2</sup>

The **Opioid Management Hospital Self-Assessment** measures performance on the following 8 questions across 4 domains of care:

- 1. Safe & effective opioid use
  - a. Appropriate opioid discharge prescribing guidelines
  - b. Alternatives to opioids for pain management
- 2. Identification & treatment
  - a. Medication Assisted Treatment
  - b. Timely follow up care
- 3. Overdose prevention
  - a. Naloxone education & distribution programs
- 4. Cross-cutting opioid management best practices
  - a. Organizational infrastructure
  - b. Address stigma with physicians & staff
  - c. Patient & family engagement

The Opioid Management Hospital Self-Assessment uses 8 questions to measure opioid managements across the following 4 domains of care: 1) safe & effective opioid use, 2) identifying and managing patients with Opioid Use Disorder (OUD), 3) overdose prevention, and 4) applying cross-cutting opioid management best practices. CHC designed this tool as both a measurement and quality improvement tool. In the pilot year of the program, 60 hospitals voluntarily reported their progress on addressing the opioid crisis.

*The Opioid Management Hospital Self-Assessment* outlines key milestones to



achieving safe and effective opioid use but how hospitals get there is up to them. To help accelerate implementation of opioid care best practices and to support all California adult, acute care hospitals achieve the Opioid Care Honor Roll, CHC provides multiple virtual learning opportunities and an online resource library.<sup>3</sup> CHC's annual 5-part webinar series brings together subject matter experts and representatives from peer hospitals that have successfully deployed best practices.

#### Methodology:

Between June and October 2020 CHC invited all California adult, acute care hospitals to voluntarily submit their *Opioid Management Hospital Self-Assessment* results to be considered for the 2020 Opioid Care Honor Roll. Eighty-nine hospitals, out of 330 eligible hospitals, submitted their 2020 self-assessment results. Participating hospitals could achieve up to 32 points across 8 questions, with 11 extra credit opportunities for a grand total of 43 possible points. Using the *Opioid Management Hospital Self-Assessment* CHC's Board of Directors identified a relevant threshold to identify honor roll hospitals using a combination of baseline data from the 2019 pilot year and current submission cycle. While extra credit points in measurement and innovation were applied toward achieving the honor roll, the relevant threshold was calculated excluding the extra credit opportunities. In addition, hospitals must score at least one point in each domain to be eligible for the honor roll. The 2020 Opioid Care Honor roll uses two approaches to identify honor roll hospitals.

<u>Superior Performance</u>: The hospital scores at least 27 points out of 32 points ( $\geq$ 75<sup>th</sup> percentile) and scores at least one point in each of the 4 domains of care.

<u>Excellent Progress</u>: The hospital scores between 21 and 26 points out of 32 points ( $\geq$ 50<sup>th</sup> percentile and  $\leq$ 74<sup>th</sup> percentile) and scores at least one point in each of the 4 domains of care.

#### **Results:**

Using this approach 53 hospitals achieved the 2020 Opioid Care Honor Roll out of 89 participating hospitals. Twenty-five hospitals met 'Superior Performance' criteria, and 28 additional hospitals met the 'Excellent Progress' criteria (see Appendix 1). The resulting list was approved by the CHC Technical Advisory Committee and Board of Directors to ensure accuracy and that high performance is indicative of an overall trend.

#### Conclusion:

CHC acknowledges that 2020 has brought unique challenges to hospitals combatting the opioid epidemic in their communities. Hospitals are fighting, not one but, two epidemics with COVID-19 taking precedence for many. As a result, there has been a rise in opioid drug-related overdoses nationwide.<sup>4</sup>



All 89 hospitals participating in the 2020 Opioid Care Honor Roll program are deeply committed to providing appropriate opioid care and treatment for those with OUD in their communities (see Appendix 2 the list of 36 additional participating hospitals that did not achieve the 2020 Opioid Care Honor Roll). The 89 participating hospitals represent just 30% of all adult, acute care hospitals in California but represent a diverse cross section of all California Hospitals across rural, urban, and academic care settings. For many, the process of applying for the Opioid Care Honor Roll can be quite a lift requiring multi-stakeholder collaboration to review and respond to the *Opioid Management Hospital Self-Assessment*. Participation in this year's Opioid Care Honor Roll is a signal to California's healthcare community that these hospitals are actively accelerating and strengthening their opioid stewardship programs.

Hospitals achieving 'Superior Performance' have implemented advanced, innovative opioid stewardship strategies across multiple service lines, consistently achieving the highest level of performance across the 4 domains of care as measured by the *Opioid Management Hospital Self-Assessment*. In addition, these hospitals are actively measuring and monitoring performance for the purpose of continued quality improvement.

Hospitals achieving 'Excellent Progress' have taken steps to spread and scale appropriate opioid prescribing guidelines, OUD treatment, and overdose prevention strategies across one or more service lines that reduce the use and risk of opioids for patients who visit emergency rooms, new patients with pain, and patients being discharged to reduce the likelihood of chronic use. These hospitals consistently achieve a Level 2 or 3 across the 4 domains of care as measured by the *Opioid Management Hospital-Self Assessment*.

Room for improvement still exists. Results shows opportunities for improvement across all California hospitals. Opportunities include addressing stigma among physicians and staff, patient and family engagement, and developing innovative strategies that consider social determinants of health. In 2021, Cal Hospital Compare will update the Opioid Care Honor Roll Program with additional practices that are proven effective and will support their rapid spread among hospitals with additional learning opportunities, including another webinar series.

<sup>&</sup>lt;sup>1</sup> Opioid Management Hospital Self-Assessment. Cal Hospital Compare. (2020)

<sup>&</sup>lt;sup>2</sup> Opioid Care Honor Roll Advisory Group. Cal Hospital Compare. (2020)

<sup>&</sup>lt;sup>3</sup> Opioid Resource Library. Cal Hospital Compare. (2020)

<sup>&</sup>lt;sup>4</sup> <u>Issue brief: Reports of increases in opioid- and other drug-related overdose and other concerns during COVID</u> pandemic. American Medical Association. (2020)



#### Appendix 1: Opioid Care Honor Roll Recipients

Hospital Name	City
Superior Performance (25)	
Adventist Health Clear Lake	Clearlake
Adventist Health Howard Memorial	Willits
Adventist Health Rideout Memorial Hospital	Marysville
Bakersfield Memorial Hospital	Bakersfield
California Hospital Medical Center	Los Angeles
Contra Costa Regional Medical Center	Martinez
Doctors Medical Center of Modesto	Modesto
Harbor - UCLA Medical Center	Torrance
Highland Hospital	Oakland
Marshall Medical Center	Placerville
Mercy Medical Center Mount Shasta	Mount Shasta
Mercy San Juan Medical Center	Carmichael
Olive View - UCLA Medical Center	Sylmar
Rancho Los Amigos National Rehabilitation Center	Downey
Santa Clara Valley Medical Center	San Jose
Scripps Green Hospital	La Jolla
Scripps Memorial Hospital - Encinitas	Encinitas
Scripps Memorial Hospital - La Jolla	La Jolla
Scripps Mercy Hospital	San Diego
Sierra Nevada Memorial Hospital	Grass Valley
St. Bernardine Medical Center	San Bernardino
St. Francis Memorial Hospital	San Francisco
St. Mary Medical Center Long Beach	Long Beach
UC Davis Medical Center	Sacramento
UC Irvine Health	Orange
Excellent Progress (28)	
Adventist Health Hanford	Hanford
Adventist Health Ukiah Valley	Ukiah
Community Hospital of the Monterey Peninsula	Monterey
Dominican Hospital	Santa Cruz
Enloe Medical Center - Esplanade Campus	Chico
Healdsburg District Hospital	Healdsburg
John Muir Medical Center - Concord Campus	Concord
Mammoth Hospital	Mammoth Lakes
MemorialCare Long Beach Medical Center	Long Beach
MemorialCare Orange Coast Medical Center	Fountain Valley
MemorialCare Saddleback Medical Center	Laguna Hills
Mercy General Hospital	Sacramento
Mercy Medical Center Redding	Redding
Mission Hospital - Mission Viejo	Mission Viejo
O'Connor Hospital	San Jose



#### Appendix 1: Opioid Care Honor Roll Recipients

Hospital Name	City
Excellent Progress cont. (28)	
Providence Saint John's Health Center	Santa Monica
San Gorgonio Memorial Hospital	Banning
St. Joseph Hospital, Eureka	Eureka
St. Joseph's Medical Center - Stockton	Stockton
St. Louise Regional Hospital	Gilroy
St. Mary Medical Center - Apple Valley	Apple Valley
Stanford Health Care - ValleyCare - Pleasanton	Pleasanton
Sutter Medical Center - Sacramento	Sacramento
Tahoe Forest Hospital	Truckee
UCLA Medical Center - Santa Monica	Los Angeles
UCSF Medical Center - Moffitt/Long	San Francisco
Woodland Healthcare	Woodland
Zuckerberg San Francisco General Hospital and Trauma Center	San Francisco



#### Appendix 2: Opioid Care Honor Roll Participants

Hospital Name	City
Participant (36)	
Adventist Health Bakersfield	Bakersfield
Adventist Health Glendale	Glendale
Adventist Health Mendocino Coast	Fort Bragg
Adventist Health White Memorial	Los Angeles
Antelope Valley Hospital	Lancaster
Barton Memorial Hospital	South Lake Tahoe
Colusa Medical Center	Colusa
Community Memorial Hospital	Ventura
El Camino Hospital	Mountain View
French Hospital Medical Center	San Luis Obispo
Good Samaritan Hospital - Bakersfield	Bakersfield
LAC+USC Medical Center	Los Angeles
Methodist Hospital of Southern California	Arcadia
Mission Community Hospital - Panorama Campus	Panorama City
Oak Valley District Hospital	Oakdale
Ojai Valley Community Hospital	Ojai
Palmdale Regional Medical Center	Palmdale
Pomona Valley Hospital Medical Center	Pomona
Providence Holy Cross Medical Center	Mission Hills
Providence Little Company of Mary Medical Center San Pedro	San Pedro
Providence Little Company of Mary Medical Center Torrance	Torrance
Providence Saint Joseph Medical Center	Burbank
Providence Tarzana Medical Center	Tarzana
Riverside University Health Systems	Moreno Valley
Saint Agnes Medical Center	Fresno
Salinas Valley Memorial Healthcare System	Salinas
Santa Rosa Memorial Hospital	Santa Rosa
Sequoia Hospital	Redwood City
Sharp Chula Vista Medical Center	Chula Vista
Sharp Coronado Hospital and Healthcare Center	Coronado
Sharp Grossmont Hospital	La Mesa
Sharp Memorial Hospital	San Diego
Sierra View Medical Center	Porterville
St. Elizabeth Community Hospital	Red Bluff
St. Jude Medical Center	Fullerton
Sutter Lakeside Hospital	Lakeport



#### Cal Hospital Compare Announces 2020 Honor Rolls

#### December X, 2020

Sacramento, CA –California Health and Human Services Agency Secretary Dr. Mark Ghaly, along with Cal Hospital Compare, recognized hospitals across California today for their high performance in maternity care and commitment to appropriate opioid use.

- 32 hospitals met performance standards in both maternity and opioid care.
- 141 hospitals met performance standards in maternity care.
- 53 hospitals met performance standards in opioid care.

"Improving the quality of patient care for all, especially in communities that don't have equitable outcomes, is an ongoing process," said Dr. Ghaly. "We applaud these hospitals for doing excellent work and showing how improvement is possible with an eye to reducing disparities for vulnerable populations."

"Cal Hospital Compare is proud to contribute to the statewide effort to improve quality in the hospital setting by providing a roadmap and way to evaluate performance for hospitals in the important areas of maternity and opioid care - and show where improvement is needed," said Bruce Spurlock, MD, the executive director of Cal Hospital Compare. "We invite all California hospitals to use these honor rolls as a tool to evaluate and benchmark performance against other hospitals."

Cal Hospital Compare, a nonprofit organization, has been providing Californians with objective hospital performance ratings for more than a decade. For the last five years, California has also recognized hospitals that meet or exceed a statewide target of C-section rates of 23.9 percent for low-risk, first-births. For mothers, overuse of C-sections can result in higher rates of complications like hemorrhage, transfusions, infection, and blood clots. The surgery also brings risks for babies, including higher rates of infection, respiratory complications, neonatal intensive care unit stays, and lower breastfeeding rates. The California Maternal Quality Care Collaborative collects the data and actively works with hospitals to safely reduce low-risk C-sections. Between 2014 and 2019, the percentage of California hospitals meeting the target went from 40% to 141 statewide. there significant 65%, representing hospitals While is still opportunity for improvement, the fact that so many hospitals have already reached or surpassed this target indicates that reducing unnecessary C-sections is a top priority for California hospitals providing maternity care.

Today, Cal Hospital Compare is releasing its first Opioid Care Honor Roll, recognizing 53 hospitals for their progress and performance promoting safe and effective opioid use, providing treatment for patients with opioid use disorder, and providing access to naloxone to prevent opioid overdoses. According to state data, over 2,400 Californians died of an opioid-related overdose in 2018 with a more dramatic impact on vulnerable populations. Patients with opioid use disorder are frequently hospitalized or visit the emergency department due to complications of the condition without also receiving treatment for the underlying disease of opioid addiction. This is a missed opportunity and leaves patients untreated

#### **DRAFT Press Release**



and at high risk of future overdose. In 2020, 89 hospitals voluntarily reported their progress on addressing the opioid crisis. While results show participating hospitals are making progress, it is also clear more work is needed, when results are compared to those collected in the 2019 pilot year. Opportunities include addressing stigma among physicians and staff, patient and family engagement, and developing innovative strategies that consider social determinants of health. In 2021, Cal Hospital Compare will continue to offer learning opportunities to support the rapid spread of evidence-based practices among hospitals.

"I encourage all hospitals to participate in the Opioid Care Honor Roll program next year," said Dr. Ghaly. "Cal Hospital Compare has numerous free resources available that will help hospitals be more effective against this epidemic. Participating in the Opioid Care Honor Roll demonstrates a hospital's commitment to treating opioid use disorder and reducing deaths from addiction."

"In particular, we'd like to applaud the following 32 hospitals for achieving recognition on the Maternity and Opioid Care Honor Rolls," said Dr. Ghaly. For more information on individual honor rolls and recipients please refer to the Cal Hospital Compare website here.

32 Hospitals with Maternity and Opioid	Care Honor Roll Status	
Hospital Name		

Hospital Name	City
Adventist Health Clear Lake	Clearlake
Adventist Health Rideout Memorial Hospital	Marysville
Adventist Health Ukiah Valley	Ukiah
Bakersfield Memorial Hospital	Bakersfield
California Hospital Medical Center	Los Angeles
Community Hospital of the Monterey Peninsula	Monterey
Contra Costa Regional Medical Center	Martinez
Doctors Medical Center of Modesto	Modesto
Enloe Medical Center - Esplanade Campus	Chico
Harbor - UCLA Medical Center	Torrance
Highland Hospital	Oakland
Marshall Medical Center	Placerville
MemorialCare Saddleback Medical Center	Laguna Hills
Mercy Medical Center Mount Shasta	Mount Shasta
Mercy Medical Center Redding	Redding
Mission Hospital - Mission Viejo	Mission Viejo
Olive View - UCLA Medical Center	Sylmar
Providence Saint John's Health Center	Santa Monica
Santa Clara Valley Medical Center	San Jose
Scripps Memorial Hospital - Encinitas	Encinitas
Scripps Mercy Hospital	San Diego
St. Bernardine Medical Center	San Bernardino
St. Joseph Hospital, Eureka	Eureka
St. Joseph's Medical Center - Stockton	Stockton

#### **DRAFT Press Release**



- St. Louise Regional Hospital St. Mary Medical Center - Apple Valley St. Mary Medical Center Long Beach Sutter Medical Center - Sacramento UC Irvine Health UCLA Health Woodland Healthcare Zuckerberg San Francisco General Hospital and Trauma Center
- Gilroy Apple Valley Long Beach Sacramento Orange Los Angeles Woodland San Francisco





### **COVID-19 in California's Nursing Homes:** Factors Associated with Cases and Deaths

DECEMBER 2020



AUTHORS Bruce Spurlock, Alex Stack, Charlene Harrington, Leslie Ross, Mahil Senathirajah, Frank Yoon, Parker Lewis, and Richele Benevent

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#### About Cal Hospital Compare

For more than a decade, Cal Hospital Compare has been providing Californians with objective hospital performance ratings. Cal Hospital Compare is a nonprofit organization governed by a multistakeholder board that includes representatives of hospitals, purchasers, consumer groups, and health plans. It uses an open and collaborative process to aggregate public data and establish relevant measures and scoring. To learn more, visit www.calhospitalcompare.org.

#### About the Foundation

The California Health Care Foundation is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. We work to ensure that people have access to the care they need, when they need it, at a price they can afford.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patientcentered health care system.

For more information, visit www.chcf.org.

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# **Executive Summary**

ursing homes have been carrying the heaviest burden of COVID-19 cases and deaths compared to other health facilities in California and across the nation. According to the California Department of Public Health (CDPH), the state has had a cumulative 29,232 COVID-19-positive nursing home residents and 4,835 coronavirus-related deaths through November 15.<sup>1</sup>

To better understand the factors behind the spread of COVID-19 in California nursing homes, Cal Hospital Compare (CHC), in partnership with IBM Watson Health and the University of California, San Francisco (collectively known as the CHC Project Team), studied COVID-19 data from more than 800 nursing homes at two distinct points in time during the pandemic — once in May 2020 and once in August 2020.

#### **Overall Findings**

The study found significant spread of coronavirus between May and August, when the number of COVID-19 cases and deaths in nursing homes more than doubled. In May, a quarter (25%) of the nursing homes studied had one or more residents with COVID-19, and 16% had at least one resident death attributable to the coronavirus. By August, 66% of facilities had a COVID-19 case, and 37% had at least one resident who had died of COVID-19.

The study notes that several facility and resident characteristics were associated with higher COVID-19 cases and deaths — including ownership status, nursing home size, staffing levels, and resident demographics. The most dominant factors in the spread of the coronavirus evolved as the pandemic progressed. For example, earlier in the pandemic, ownership status was most correlated with large numbers of cases and deaths, while in August the biggest driver was resident demographics. The study, commissioned by the California Health Care Foundation, underscores the importance of continued research to understand the evolving dynamics of the pandemic. The researchers also made a series of recommendations for addressing these issues.

#### **Definitions and Methodology**

Nursing homes provide skilled nursing services to people who require either short-term care (e.g., recovery after surgery) or long-term care that includes clinical care and residential services.

To assess factors that put nursing home residents at increased risk of infection and mortality from COVID-19, the CHC Project Team analyzed multiple explanatory factors at two points in time: May 24, 2020, and August 9, 2020.

The study population included 1,150 nursing homes across California. For the analyses, only nursing homes with complete data for all variables were used, resulting in a sample size of 825 nursing homes (May) and 841 nursing homes (August).

#### Major Factors Driving COVID-19 Case and Death Rates

**Ownership status.** Early in the pandemic, for-profit nursing homes had COVID-19 case rates five to six times higher than those of nonprofit and government-run nursing homes. This was true of both independent nursing homes and those that are part of a corporate chain.

**Nursing home size.** At the August time point, larger nursing homes (those with more than 99 licensed beds) had case rates at least 55% greater than those with 68 or fewer licensed beds. Both the COVID-19 case rate and death rate were consistently higher for larger nursing homes versus smaller facilities.

**Staffing levels.** COVID-19 case rates were significantly higher in nursing homes with staffing levels below those recommended for registered nurses (0.8 registered nurse hours per resident day) and total nursing staff (4.1 hours per resident day). In May, nursing homes with total staff levels at or below 3.8 hours per resident day had about twice the case rates of homes with staffing levels greater than 4.4 hours per resident day. As the pandemic progressed, nursing homes with adequate registered nurse (RN) staffing had greater protection against COVID-19 cases and deaths: In August, nursing homes with RN staffing greater than 0.7 hours per resident day had 50% fewer COVID-19 cases than those with fewer RN hours per resident day.

**Resident demographics.** As the pandemic spread, some demographic factors of the nursing home population became more significant risk factors.

- Age. In August, nursing homes with more than 45% of residents age 85 years or older had almost a 50% higher COVID-19 case rate and a 70% higher COVID-19 death rate.
- Gender. Between the May and August time points, nursing homes with more than 49% male residents experienced a more than 2.5-fold increase in COVID-19 case rates.
- Race/ethnicity. The COVID-19 case rate was disproportionately higher in nursing homes with a higher percentage of Black or Latinx residents. In May, nursing homes with more than 2% Black residents had COVID-19 case rates that were about three times higher than facilities with 2% or less Black residents. By August, nursing homes with more than 26% Latinx residents had a 57% higher case rate than those with 6% or less Latinx residents.

#### **Recommendations in Five Key Areas**

Based on the research results, the CHC Project Team developed a series of recommendations aimed at meaningfully improving the quality of care in nursing homes during the current pandemic and going forward. Most can be implemented immediately.

**Ownership oversight.** The project team recommends that CDPH immediately strengthen oversight, especially in at-risk facilities, over minimum federal nursing home standards, including staffing, infection control, sanitation, and emergency requirements. The report also recommends giving the Department of Health Care Services (DHCS) more authority to increase annual financial disclosure requirements for nursing homes and increase financial controls on cost centers.

**Facility size and design.** The study suggests CDPH should launch a collaborative learning program among nursing homes to share effective practices that prevent and reduce the spread of infections. It also suggests nursing homes should reduce the number of residents within their largest facilities and increase the use of private rooms. The study also recommends establishing a statewide task force to study the feasibility and financial mechanisms for the future modernization, redesign, and rebuilding of nursing homes to reduce the size of facilities.

**Staffing.** The project team suggests that CDPH immediately require all nursing homes to meet Centers for Medicare & Medicaid Services requirements that facilities "have sufficient nursing staff with the appropriate competencies and skills sets." Additionally, DHCS should develop pathways for nursing homes to reduce turnover and increase their staffing levels over the next two years by redesigning the Medi-Cal reimbursement system. The report also says CDPH should allow select family members and friends to be deemed essential workers in a time of crisis to supplement resident care.

#### Health equity promotion and infection prevention.

The study recommends that CDPH take a variety of steps to promote equity. Given the disproportionate number of COVID-19 infections in nursing homes with a large proportion of Black and Latinx residents, CDPH should ensure all facilities test staff weekly for COVID-19 and require at least annual training on issues from infection control to culturally sensitive care. CDPH should also distribute vaccines to residents and staff in the highest-risk facilities first.

**Transparency and public reporting of data.** To make nursing home data more consistent and easier to access, the study recommends that CDPH develop a one-stop nursing home information dashboard, updated weekly, to monitor COVID-19 or other infectious disease outbreaks in nursing homes.

The pandemic has magnified longstanding operational challenges and exposed systemic vulnerabilities in nursing homes.

### Background

Nursing homes — compared to other health care facilities — have been carrying the heaviest burden of COVID-19 cases and deaths in California and across the nation. Nursing homes provide skilled nursing services to people who require either short-term care (e.g., recovery after surgery) or long-term care that includes clinical care and residential services. As of November 15, 2020, the California Department of Public Health (CDPH) reported a cumulative 29,232 COVID-19-positive nursing home residents and 4,835 COVID-19-related deaths since January 2020.<sup>2</sup> Although nursing home residents are less than one-half of 1% of the state's population, about 26% of all COVID-19-related deaths in California occur in these facilities.<sup>3</sup>

Challenges in providing high-quality care in California's nursing homes predate the current pandemic, which has magnified long-standing operational challenges and exposed systemic vulnerabilities in skilled nursing.<sup>4</sup>

To understand and support meaningful quality improvement in the state's nursing homes, Cal Hospital Compare (CHC), in partnership with IBM Watson Health and the University of California, San Francisco (collectively known as the CHC Project Team), analyzed numerous potential factors that may have put California nursing home residents at increased risk of infection and mortality from COVID-19. The work was commissioned by the California Health Care Foundation.

Factors that affect quality of care and outcomes in these facilities have been studied for decades. To understand these factors and their effect in a non-pandemic environment, the CHC Project Team conducted a comprehensive literature review. Key findings from this literature review include the following:

- Higher nurse staffing levels improve resident outcomes.
- For-profit ownership is associated with resident outcomes and quality well below average.
- Medi-Cal coverage, particularly for "dual-eligible" Californians,<sup>5</sup> is associated with longer lengths of stay and poor resident outcomes.
- The number of nursing home citations and deficiencies is directly correlated with poor resident outcomes.
- People of color tend to receive care in lowerperforming nursing homes.

While early COVID-19 research in nursing homes has pointed to these and other factors as being associated with worse outcomes, the CHC Project Team explored a broader list of possible explanatory factors, using publicly available national and state data. They evaluated the impact of these factors on COVID-19 infections and deaths, and how the impact of these factors changed as the pandemic evolved. To guide the analysis and interpret the results, the CHC Project Team convened a multistakeholder advisory committee representing a diverse cross-section of perspectives. Members included patient and family advisers, long-term care advocates, subject matter experts, researchers, and representatives from labor organizations, Medicare and Medi-Cal health plans, quality improvement organizations, and state agencies (see Appendix A). The advisory committee provided input on study design, reviewed results, and discussed recommendations, but was not asked to formally endorse this report or its recommendations, which are the authors' alone.

## Methodology

To assess factors that put nursing home residents at increased risk of infection and mortality from COVID-19, the CHC Project Team analyzed multiple explanatory factors at two points in time: May 24, 2020, and August 9, 2020 (see Tables 1 and 2). The May 24 data are the earliest data available from the Centers for Medicare & Medicaid Services (CMS) after the onset of the pandemic in early 2020. The August 9 data were the most recently available data at the time of running the analyses. Regression modeling<sup>6</sup> was used to examine both (1) explanatory factors, by quartile, at each of the two time points and (2) changes in explanatory factors *between* the two time points as the pandemic progressed. See Appendix B for a full list of explanatory factors examined.

The study population included 1,150 nursing homes across California. For the analyses, only nursing homes with complete data for all variables were used, resulting in a sample size of 825 nursing homes for May 24, 2020, and 841 nursing homes at the August 9, 2020, time point.

#### Table 1. Outcome Measures

Number of nursing home residents who...

- ▶ Tested positive for COVID-19
- Died with suspected or laboratory-confirmed COVID-19, regardless of place of death

#### Table 2. Primary Explanatory Factors

	MEASURE
External	<ul> <li>County-level COVID-19 case rate</li> </ul>
Facility	<ul> <li>Size (number of licensed beds)</li> <li>Chain and ownership status</li> <li>Fines, deficiencies, complaints</li> <li>Percentage of short-stay residents who were rehospitalized after a nursing home admission</li> <li>Payer source</li> </ul>
Staffing	<ul> <li>Nursing turnover</li> <li>Registered nurse (RN) staffing</li> <li>Total nurse staffing</li> </ul>
Resident	<ul> <li>Age</li> <li>Gender</li> <li>Race/ethnicity</li> </ul>

#### **Key Results**

At the first time point, May 24, a quarter (25%) of the nursing homes in the study had at least one resident with COVID-19, and 16% had at least one resident death attributable to it. By the August 9 time point, almost two-thirds (66%) of the nursing homes had at least one resident with COVID-19, and 37% had at least one COVID-19 resident death. Such resident deaths were counted whether or not they occurred in the nursing home. The study found strong relationships between the case and death rates and several explanatory factors. The key findings are summarized below (the complete results appear in Appendix C).

#### Facility Ownership

Early in the pandemic, for-profit nursing homes, both independent ones and those that are part of a corporate chain, had COVID-19 case rates that were five to six times higher in comparison to nonprofit and government-run nursing homes. The ownership status of a nursing home had the greatest impact on COVID-19 case rate, over and above nursing home size (number of beds), county COVID-19 case rate, resident racial composition, average age of residents, and other factors examined in this project. While the reasons for these differences are not clear, this finding is consistent with other COVID-19 studies.<sup>7</sup>

Early in the pandemic, for-profit nursing homes, both independent ones and those that are part of a corporate chain, had COVID-19 case rates that were five to six times higher in comparison to nonprofit and government-run nursing homes.

#### **Facility Size**

The COVID-19 case rate and death rate were consistently higher for larger nursing homes (those with more than 99 licensed beds) versus smaller facilities (those with 68 or fewer licensed beds). At the August 9 time point, larger nursing homes had COVID-19 case rates at least 55% greater than smaller facilities. This finding is consistent with previous studies on the impact of facility size on nursing home quality and performance.<sup>8</sup> Although the CHC Project Team study did not examine facility design, such as the use of multiresident rooms and shared bathrooms, design was found to be a factor in a previous study.<sup>9</sup> Also, larger facilities present greater opportunities for staff to transmit infections among residents, reinforcing the crucial importance of all-staff training on infection control. The COVID-19 case rate and death rate were consistently higher for larger nursing homes (those with more than 99 licensed beds) versus smaller facilities (those with 68 or fewer licensed beds).

#### Staffing

Throughout the pandemic, nursing home staffing levels were strongly correlated with COVID-19 case rates and deaths. California law currently requires nursing homes with 99 or fewer licensed beds to have one registered nurse (RN) on duty during the day seven days a week and one licensed vocational nurse (LVN) on duty evenings and nights. Facilities licensed for 100 beds or more must have one RN on duty 24 hours per day. All nursing homes must have a daily minimum of 3.5 total staffing hours per resident day (HPRD)<sup>10</sup> or a daily minimum of 2.4 HPRD for certified nursing assistants (CNAs) and 1.1 HPRD for LVNs or both (since 2018), although waivers may be requested for nursing shortages or resident acuity.<sup>11</sup> California nursing homes have been held to staffing standards and waiver requirements before and during the current pandemic. However, experts recommend, at a minimum, 0.8 RN HPRD and 4.1 total staffing HPRD for optimal resident care.<sup>12</sup>

Early in the pandemic, nursing homes with total nurse staffing (RN, LVN, and CNA) at or below 3.8 HPRD had about twice the case rates of homes with staffing greater than 4.4 HPRD. As the pandemic progressed, RN staffing provided greater protection against COVID-19 cases and deaths. In August, nursing homes with RN staffing greater than 0.7 HPRD had almost 50% fewer COVID-19 cases than those with 0.4 HPRD or less. While the analysis did not reveal why total nurse staffing was more important early on and RN staffing more important as the pandemic evolved, the authors hypothesized that later in the pandemic, more was known about the prevention and treatment of COVID-19, and personal protective equipment (PPE) and testing became more readily available. Also, facilities with higher RN staffing may have been better

able to provide the necessary supervision, training, and infection control to incorporate the equipment and knowledge that resulted in lower case rates. The findings of higher total and RN staffing being associated with fewer infections, deaths, and outbreaks are consistent with other COVID-19 research in the nursing home environment.<sup>13</sup>

The data also showed that, in August, nursing homes with RN turnover greater than 50% had 30% higher COVID-19 case rates compared to those with the lowest nursing turnover. This finding is consistent with numerous studies on nursing home quality.<sup>14</sup>

The COVID-19 case rate and death rate were lower for nursing homes with higher levels of RN HPRD (greater than 0.7 HPRD). The gap between nursing homes with high levels of staffing versus low levels became wider over time, which points to the protective effect of RN staffing against COVID-19 infections and deaths. It is important to note that California currently allows facilities to be given workforce shortage and resident acuity waivers that can reduce staffing levels to well below evidence-based standards.<sup>15</sup>

#### **Resident Demographics**

As the pandemic spread, some demographic factors of the nursing home population — age, gender, and race/ethnicity — became more significant risk factors, while nursing home characteristics, such as ownership status, no longer played a significant role in COVID-19 case rates.

- Age. People age 85 and older are at highest risk of serious illness from COVID-19.<sup>16</sup> In August, nursing homes with more than 45% of residents age 85 and older had a 50% higher COVID-19 case rate and a 70% higher COVID-19 death rate.
- Gender. Between the May and August time points, nursing homes with more than 49% male residents experienced a more than 2.5-fold increase in COVID-19 case rates.

Race/ethnicity. People in certain racial and ethnic groups are at higher risk of being infected with COVID-19 and dying from it.<sup>17</sup> In May, nursing homes with more than 2% Black residents had COVID-19 case rates that were about three times higher than facilities with 2% or less Black residents. By August, nursing homes with more than 26% Latinx residents had COVID-19 case rates that were 57% higher than facilities with 6% or less Latinx residents.

#### **Study and Data Limitations**

This project used publicly reported data at the facility level. Without resident-level data, certain explanatory factors could only be measured at the facility level. In addition, due to rapid changes in nursing home reporting requirements related to COVID-19, the data accuracy is unknown. The data limitations are as follows:

**Payer source.** The financial reports provided by California's Office of Statewide Health Planning and Development (OSHPD) do not separate Medi-Cal Managed Care from Medicare and private managed care plans.\* Therefore, strong correlations between payer source and COVID-19 cases and deaths could not be made.

**Resident characteristics.** This project used OSHPD nursing home utilization data on resident characteristics (which is collected for December 31 of each year) to obtain age, gender, and race/ethnicity.\* The number of residents with mental illness, Alzheimer's, and developmental disabilities did not appear to be accurate to either the CHC Project Team or the advisory group and was therefore excluded from this study. Moreover, nursing home resident utilization data on one day per year may not be representative of the data throughout the year.

**Other.** Detailed data on testing, access to personal protective equipment (PPE), and staffing during the pandemic were not available.

\*2018 - Pivot Table - Long-Term Care Annual Financial Data, CHHS Open Data Portal, accessed July 31, 2020.

#### **Recommendations**

Based on these results and the existing research, the CHC Project Team developed a series of recommendations aimed at meaningfully improving the quality of care in nursing homes during the current pandemic and going forward. Most can be acted upon immediately, while others could be implemented over the next 12 to 24 months.

The following recommendations are intended for policymakers, care improvement organizations — such as ombudsman organizations, resident/family advocacy groups, and quality improvement organizations and nursing home administrators.

#### **Ownership Oversight**

- Policymakers should give the Department of Health Care Services (DHCS) the authority to increase the annual financial disclosure of nursing homes by requiring a consolidated financial report for all related party organizations and entities — including management, property, and parent companies — in the coming year.
- DHCS should be given authority to establish financial controls on cost centers for each nursing home company rather than only cost controls on the Medi-Cal expenditures.
- Policymakers should consider creating a targeted medical loss ratio threshold for all nursing home payers.
- The California Department of Public Health (CDPH) should immediately strengthen regulatory oversight, especially in at-risk facilities,<sup>18</sup> to ensure that all facilities meet minimum federal nursing home standards for quality, including staffing, infection control, sanitation, and emergency requirements.

#### Facility Size and Design

 CDPH should immediately augment a collaborative learning program among California nursing homes and Quality Improvement Organizations (QIOs) to share effective practices — given the current facility size and design — to prevent infections and reduce spread of infections.

- Where feasible and recognizing that this may have financial consequences for the facility — nursing homes should immediately reduce the number of residents within the largest facilities and increase the number of residents living in private rooms.
  - Prioritize cohorting COVID-19 cases in separate areas of the facility.
  - Enlarge the amount of open space so that residents can maintain social distance, including during permissible visits with family and friends.
- California's Office of Statewide Health Planning and Development (OSHPD) should conduct a survey of nursing homes on the age of buildings, their size and design, the number of residents per room and bathroom, and other building features.
- For the long term, California could establish a statewide task force to study the feasibility and financial mechanisms for the future modernization, redesign, and rebuilding of nursing homes to reduce the size of facilities, develop single rooms for residents, and expand shared spaces to allow for greater social distancing.

#### Staffing

- DHCS should develop a pathway for nursing homes to increase their staffing levels to evidence-based levels over the next two years by redesigning the Medi-Cal reimbursement system.
- CDPH should immediately require nursing homes to meet CMS requirements that "the facility must have sufficient nursing staff with the appropriate competencies and skills sets to provide nursing and related services to assure resident safety and attain or maintain the highest practicable physical, mental, and psychosocial well-being of each resident, as determined by resident assessments and individual plans of care and considering the number, acuity and diagnoses of the facility's resident population in accordance with the facility assessment."<sup>19</sup>

- CDPH and DHCS should be given authority to eliminate workforce shortage and resident acuity waivers for nursing homes over the next two years by using Medi-Cal direct care wage and benefit pass-throughs.
- DHCS should require nursing homes to reduce average annual nursing turnover rates to 25% within two years by using Medi-Cal direct care wage and benefit pass-throughs.
- CDPH should obtain nursing home Payroll Based Journal data submitted to CMS to monitor and enforce nursing home staffing requirements.
- CDPH should promote skill enhancement (i.e., provide opportunities for staff to obtain related certifications, training, and other professional development), especially related to infection prevention.
- CDPH should allow select family members and friends to be deemed essential workers in a time of crisis to supplement resident care. Physical separation from family and other loved ones has taken a physical and emotional toll on residents during the COVID-19 pandemic. Residents may feel socially isolated, leading to increased risk for depression, anxiety, and other expressions of distress.<sup>20</sup>

# Health Equity Promotion and Infection Prevention

- CDPH should distribute vaccines to residents and staff in at-risk facilities first.
- CDPH should consider enhanced oversight for at-risk facilities based on a new understanding of factors associated with COVID-19 infections and death. Oversight can include targeted educational, operational, and infection prevention support and monitoring to prevent outbreaks.
- CDPH should strengthen training protocols to ensure that all nursing home staff are knowledgeable about infection control, sanitation, and emergency requirements. It can require trainings to be at least annual and meet other goals, such as

being culturally sensitive. The designated infection preventionist can be required to have certification by the Certification Board of Infection Control and Epidemiology.

- CDPH should immediately ensure that all facilities follow CDPH guidance for testing staff weekly for COVID-19.
- CDPH should immediately evaluate and report other health care-associated infections in nursing homes similar to existing protocols in the hospital community.

#### Need for More and Better Data, More Transparency

Although California has some nursing home information on public dashboards, these are not all located in one area and are not easy for consumers to use. County nursing home data and CMS nursing home data are more precise, with the exact number of COVID-19 infections, while CDPH masks numbers under 11 for the same facilities.

To make data more consistent and easier to access, the CHC Project Team recommends that the CDPH publish more-detailed information, weekly, to monitor COVID-19 or other infectious disease outbreaks in nursing homes. A one-stop nursing home information dashboard, updated at least weekly, with data available for the public by download or application programming interface, could include the following:

- Number of residents, number of infections and deaths for residents (and staff)
- ► PPE supply
- Staffing hours per resident day using the Payroll Based Journal data files and staffing waivers
- Weekly number of tests and testing results for residents and staff

Health insurance payment data are critical to understanding the dynamics of care in nursing homes. The literature review revealed that nursing homes with a high proportion of residents eligible for and enrolled in both Medicare and Medi-Cal have longer lengths of stay and poorer resident outcomes.<sup>21</sup> Currently, reports provided by OSHPD do not allow researchers to differentiate resident days by Medi-Cal Managed Care, Medicare, and private managed care plans. Furthermore, the state appears to have conflicting data definitions and/or data submission guidance for Medi-Cal managed care plans.

The following recommendations could help make data more useful:

- OSHPD and DHCS could send a joint All Facilities Letter indicating the optimal strategy for reporting Medi-Cal managed care utilization and standardizing data definitions.
- OSHPD could replace its annual nursing home utilization survey with the CMS Minimum Data Set quarterly to summarize and publicly report the total number of residents by demographics (with race and ethnicity data reported as a combined single category), resident conditions, medical conditions, limitations in activities of daily living, nursing care needs, and therapy needs.

#### **Research Recommendations**

Several important studies on nursing homes and COVID-19 could be conducted to inform policymakers, consumers, and providers, including the following:

- A repeat of this study in the mid-fall to determine if the explanatory factors have continued to evolve and how. A time series methodology may be appropriate.
- Qualitative studies examining the impact of highpriority potential explanatory variables where public data or well-described measures do not exist. This could include how unique nursing home management, policies, and practices may have impacted COVID-19 case and death rates. Examples:
  - Visitation policies

- > PPE use and other infection prevention practices
- Staff training practices
- Case studies of nursing homes considered at-risk facilities with no COVID-19 cases (which may reveal best practices) as well as low-risk facilities with outbreaks to determine potentially modifiable factors, practices, infrastructure, or other features.
- Analyses that support a more accurate assessment of the impact of Medi-Cal as the payer, given the lower reimbursement rates and challenges Medi-Cal enrollees face accessing health care. Analyses, using Medi-Cal as a proxy for income, could reveal economic disparities resulting in COVID-19-related health disparities. As described below, related data availability issues separating Medi-Cal Managed Care from other managed care would need to be resolved.
- Evaluation of excess deaths of California nursing home residents during the pandemic, quantifying the types of non-COVID-19 excess deaths.
- Estimation of the impact of specific policy changes on COVID-19 infection and death rates.
- A study of the impact of hospital COVID-19 admissions from and discharges to nursing homes on COVID-19 infection rates and deaths.
- A formal data validation study in a sample of nursing home data submissions for the Centers for Disease Control and Prevention's new public database, the National Healthcare Safety Network COVID-19 module,<sup>22</sup> commissioned by CDPH.

# Conclusions

The findings in this study demonstrate that specific facility and resident characteristics are associated with higher COVID-19 case and death rates. The characteristics changed as the pandemic progressed, which underscores the importance of continued, rapid-cycle research to understand the evolving dynamics of the pandemic.

The recommendations in this report represent policy actions and operational changes, both immediate and longer term, that can be taken to prevent and mitigate the pandemic's impact on nursing home staff and residents.

Finally, the results of the study can be used to identify nursing homes at greatest risk of infection and mortality. This information can be used to develop protocols to mitigate the impact of the pandemic on nursing home residents and staff. While these facilities are presently dealing with the COVID-19 pandemic, use of predictive analytics and enhanced infection prevention protocols would allow nursing homes to improve care — particularly for groups of residents known to be especially vulnerable to poor outcomes — and be better equipped to deal with future pandemics and other crises.

#### Appendix A. Long-Term Care Advisory Committee

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#### Appendix B. Study Variables, by Domain

This list contains all variables considered for the purpose of this study. Shaded variables were included in the final study.

VARIABLE	LABEL	SOURCE
AGE		
PCT_LT65	Percentage of Residents <65 Years of Age	OSHPD LTC Utilization
PCT_65_84	Percentage of Residents 65–84 Years of Age	OSHPD LTC Utilization
PCT_GE85	Percentage of Residents ≥85 Years of Age	OSHPD LTC Utilization
CITATIONS/FINES/COMPLAINTS		
ABUSE_ICON	Cited for Abuse or Neglect at High Harm Level or Potential Harm Level (yes/no)	CMS NHC
FINE_CNT	Number of Fines	CMS NHC
FINE_TOT	Total Amount of Fines in Dollars	CMS NHC
PENALTY_NUMBER	Number of Fines	CDPH
TOTAL_AMOUNT_DUE_FINAL	Total Amount of Fines in Dollars	CDPH
INTAKEID_complaints	Total Number of Complaints	CDPH
INTAKEID_incidents	Total Number of Incidents	CDPH
FINE_CNT_ANY	Any Fines	CMS NHC
COUNTY COVID		
COMM_County_Covid_Case_Rate	County-Level COVID-19 Cases per 100,000	CDPH & CA Demographics
COMM_County_Covid_Death_Rate	County-Level COVID-19 Deaths per 100,000	CDPH & CA Demographics
DEFICIENCIES/INCIDENTS		
SFFStatus	Special Focus Facility Status	CMS NHC
Total_Deficiencies	Total Deficiencies	CMS NHC
Total_Deficiencies_SCOPE	Number of Deficiencies, Categories F–L	CMS NHC
Total_Deficiencies_TAG	Number of Deficiencies, Infection Control	CMS NHC
Total_Deficiencies_ClinCare	Number of Clinical Care Deficiencies	CMS NHC
Total_Deficiencies_Emergency	Number of Emergency Deficiencies	CMS NHC
Total_Deficiencies_Other	Number of Other Deficiencies	CMS NHC
ETHNICITY		
TOTAL_HISPANIC_PERCENT	Percentage of Residents Hispanic*	OSHPD LTC Utilization
TOT_NON_HISPANIC_PERCENT	Percentage of Residents Non-Hispanic*	OSHPD LTC Utilization
TOT_UNKNOWN_ETHNICITY_PERCENT	Percentage of Residents Unknown Ethnicity	OSHPD LTC Utilization

\*Report authors use the term Latinx.

VARIABLE	LABEL	SOURCE
FINANCIAL		
SW_NRSG_PER_NET_PT_REV	Nursing Salaries as a Percentage of Net Revenue	OSHPD LTC Financial
NET_INCOME_PER_NET_PT_REV	Net Income Divided by Net Revenue	OSHPD LTC Financial
Waiver_Patient	Patient-Needs Waiver Submitted	CDPH
Waiver_Staffing	Staffing Waiver Submitted	CDPH
GENDER		
MALES_TOT	Total Number of Male Residents	OSHPD LTC Utilization
FEMALES_TOT	Total Number of Female Residents	OSHPD LTC Utilization
MALES_PERCENT	Percentage of Male Residents	OSHPD LTC Utilization
FEMALES_PERCENT	Percentage of Female Residents	OSHPD LTC Utilization
LOCATION		
COUNTY	County	OSHPD LTC Utilization
OWNERSHIP		
CHOW_LAST_12MOS	Facility Changed Ownership in Last 12 Months (yes/no)	OSHPD LTC Utilization
LICEE_TOC	Licensee Type of Control (investor/nonprofit)	OSHPD LTC Utilization
MLT_OWND_FAC_ORG_SW	Part of Chain (yes/no)	CMS CASPER
CHAIN_OWNERSHIP	Part of Chain by Licensee Type of Control (investor/nonprofit)	CMS CASPER & OSHPD LTC Utilization
PAYER		
MEDICARE_PATS_PERCENT	Percentage of Medicare Residents	OSHPD LTC Utilization
MEDI_CAL_PATS_PERCENT	Percentage of Medi-Cal Residents	OSHPD LTC Utilization
MANAGED_CARE_PATS_PERCENT	Percentage of Managed Care Residents	OSHPD LTC Utilization
ALL_OTHER_PATS_PERCENT	Percentage of Other Payer Residents	OSHPD LTC Utilization
PRIVATE_SELF_PERCENT	Percentage of Private or Self-Pay Residents	OSHPD LTC Utilization
QUALITY		
SCORE_ADJUSTED_521	Percentage of Short-Stay Residents Who Were Rehospitalized After a Nursing Home Admission	CMS NHC
SCORE_ADJUSTED_522	Percentage of Short-Stay Residents Who Had an Outpatient Emergency Department Visit	CMS NHC
SCORE_ADJUSTED_551	Number of Hospitalizations per 1,000 Long-Stay Resident Days	CMS NHC
SCORE_ADJUSTED_552	Number of Outpatient Emergency Department Visits per 1,000 Long-Stay Resident Days	CMS NHC
S_004_01_PPR_PD_RSRR	Potentially Preventable Readmission Rate	CMS NHC

VARIABLE	LABEL	SOURCE
RACE		
WHITE_PERCENT	Percentage of White Residents	OSHPD LTC Utilization
BLACK_PERCENT	Percentage of Black Residents	OSHPD LTC Utilization
ASIAN_PERCENT	Percentage of Asian Residents	OSHPD LTC Utilization
OTHER_PERCENT	Percentage of Other Race Residents	OSHPD LTC Utilization
SIZE		
PT_TRNOVER	Resident Turnover (admissions/census, as of 12/31/19)	OSHPD LTC Utilization
TOT_PATS	Total Number of Residents	OSHPD LTC Utilization
BED_END	Licensed Beds	OSHPD LTC Financial
OCCUP	Occupancy Rate	OSHPD LTC Financial
SNF COVID		
RES_WK_COV_ADM	Weekly Residents Previously Hospitalized with COVID-19	CMS NHC
RES_TOT_COV_ADM	Cumulative Residents Previously Hospitalized with COVID-19	CMS NHC
RES_WK_COV_CONF	Weekly Resident Confirmed COVID-19 Cases	CMS NHC
RES_TOT_COV_CONF	Cumulative Resident Confirmed COVID-19 Cases	CMS NHC
RES_WK_COV_SUSP	Weekly Resident Suspected COVID-19 Cases	CMS NHC
RES_TOT_COV_SUSP	Cumulative Resident Suspected COVID-19 Cases	CMS NHC
RES_WK_ALL_DTH	Weekly Resident Deaths	CMS NHC
RES_TOT_ALL_DTH	Cumulative Resident Deaths	CMS NHC
RES_WK_COV_DTH	Weekly Resident COVID-19 Deaths	CMS NHC
RES_TOT_COV_DTH	Cumulative Resident COVID-19 Deaths	CMS NHC
STF_WK_COV_CONF	Weekly Staff Confirmed COVID-19 Cases	CMS NHC
STF_TOT_COV_CONF	Cumulative Staff Confirmed COVID-19 Cases	CMS NHC
STF_WK_COV_DTH	Weekly Staff COVID-19 Deaths	CMS NHC
STF_TOT_COV_DTH	Cumulative Staff COVID-19 Deaths	CMS NHC
SNF COVID OUTCOME		
RES_TOT_COV_CONF_1000RES	Total Confirmed, Cumulative COVID-19 Cases per 1,000 Residents	CMS NHC
RES_TOT_COV_DTH_1000RES	Total Confirmed, Cumulative COVID-19 Deaths per 1,000 Residents	CMS NHC

VARIABLE	LABEL	SOURCE
SNF COVID PPE SHORTAGE		
WK_SPLY_N95	PPE Shortage: One-Week Supply of N95 Masks	CMS NHC
WK_SPLY_SRGMSK	PPE Shortage: One-Week Supply of Surgical Masks	CMS NHC
WK_SPLY_EYEPR	PPE Shortage: One-Week Supply of Eye Protection (including face shields and goggles)	CMS NHC
WK_SPLY_GWN	PPE Shortage: One-Week Supply of Gowns	CMS NHC
WK_SPLY_GLV	PPE Shortage: One-Week Supply of Gloves	CMS NHC
WK_SPLY_HSAN	PPE Shortage: One-Week Supply of Alcohol-Based Hand Sanitizer	CMS NHC
WK_SPLY_VENT	PPE Shortage: One-Week Supply of Ventilator Supplies (including tubing)	CMS NHC
SHRT_RNSTF	Shortage of Nursing Staff (registered nurse, licensed practical nurse, and vocational nurse)	CMS NHC
SHRT_AID	Shortage of Aides (certified nursing assistant, nurse's aide, medication aide, and medication technician)	CMS NHC
ANY_PPE_SHORTAGE	PPE Shortage: One-Week Supply of Any PPE	CMS NHC
STAFFING		
EMP_NRSG_TURNOVER	Nursing Staff Turnover	OSHPD LTC Financial
RNHRD	Reported RN Staffing Hours per Resident Day (HPRD)	CMS NHC
TOTHRD	Reported Total Nurse Staffing HPRD	CMS NHC
RNHRD_hi	Reported RN Staffing HPRD >0.75	CMS NHC
TOTHRD_hi	Reported Total Nurse Staffing HPRD >4.1	CMS NHC

### Appendix C. Results over Time

	MAY 24, 2020	AUGUST 9, 2020
COVID-19 Case Rate		
External	Nursing homes located in counties within the highest quartile of community case rate had two times the case rate of facilities located in counties within the lower three quartiles of community case rate.	Community case rate continued to influence nursing home case rate. Nursing homes located in counties within the highest quartile of community case rate had a 33% higher case rate than facilities located in counties within the lower three quartiles of community case rate.
Facility	For-profit nursing homes had case rates that were five (chain) to six (non-chain) times higher than those of nonprofit and govern- ment-run facilities.	Facility size continued to impact case rates, with the largest facilities (i.e., those having >99 beds) having case rates that were at least 55% greater than those of the smallest facilities (i.e., those having ≤68 beds).
	Larger facilities, as measured by the number of licensed beds, had higher case rates than smaller facilities.	An interesting finding was seen in nursing homes that received a fine between June 2017 and March 2020: They had a case rate that was 20% lower than that in nursing homes that did not receive a fine.
Staffing	Nursing homes with the highest total nurse staffing (i.e., >4.4 HPRD) had case rates that were half those of facilities with the lowest total staffing (i.e., $\leq$ 3.8 HPRD).	Higher levels of RN staffing (i.e., >0.7 HPRD) was protec- tive, decreasing the case rate by almost half. Nursing homes with higher nursing turnover (i.e., >50%) had a 30% higher case rate than nursing homes with the lowest nursing turnover (i.e., $\leq$ 35%).
Resident DemographicsNursing homes with a higher percentage of Black residents (i.e., >2%) had case rates that were three times higher than those of nursing homes with the lowest percentage of Black residents (i.e., ≤2%). A high percent- age of Black residents in the nursing home had a greater impact on case rates than the county-level case rate.	Facilities having the highest percentage of male residents (i.e., >48%) had case rates that were 65% higher than those of facilities with the lowest percentage of male residents (i.e., $\leq$ 33%).	
	age of Black residents (i.e., 52 %). A high percent- age of Black residents in the nursing home had a greater impact on case rates than the county-level case rate.	Nursing homes with greater than 2% of Black residents had case rates that were approximately 25% to 40% higher than those of facilities with 2% or less Black residents. Facilities with the highest percentage of Latinx residents (i.e., >26%) had case rates that were 57% higher than facilities with 6% or less Latinx residents.
		Age also began influencing case rates, with those facili- ties having the greatest percentage of older residents (i.e., >45% of the residents were ≥85) having almost a 50% higher case rate when controlling for the other age

groups.
	MAY 24, 2020	AUGUST 9, 2020
COVID-19 Death Rate		
External	Nursing homes located in counties within the highest quartile of community case rate had 3.5 times the death rate of facilities located in counties within the lower three quartiles of community case rate.	Nursing homes located in counties within the highest quartile of community case rate had death rates that were almost 2.4 times higher than those of facilities located in counties within the lower three quartiles of community case rate.
Facility	_	Facility size influenced the number of deaths, with larger facilities (i.e., those with >99 beds) having death rates that were almost two times higher than the death rates of facilities with 68 or fewer beds.
		Another factor influencing the death rate at the August time point was a greater tendency to rehospitalize short- stay residents after a nursing home admission. Nursing homes in the third quartile of short-stay rehospitalization had a death rate that was 1.5 times that of nursing homes in the bottom quartile of short-stay rehospitalization. The information for the clinical quality measure "Percentage of Short-Stay Residents Who Were Rehospitalized After a Nursing Home Admission" was obtained at the end of 2019, predating the COVID-19 pandemic.
Staffing	_	As seen with the case rate analysis, higher RN staffing (i.e., >0.7 HPRD) had a protective effect, decreasing the death rate by half.
Resident Demographics	Nursing homes caring for a higher percent- age of Medicare residents (i.e., >23%) had a death rate that was 2.4 times higher than that of facilities with the lowest percentage of Medicare residents (i.e., $\leq$ 9%). Nursing homes caring for a higher percent- age of Black residents (i.e., >6%) had death rates that were more than three times higher than nursing homes caring for 2% or fewer Black residents.	Age was the only resident characteristic influencing death rates in August. Nursing homes with the highest percentage of residents older than 85 (i.e., >45%) had a resident death rate that was 1.7 times higher than that of nursing homes with the largest percentage of residents younger than 85.

## Endnotes

- California Department of Public Health, COVID-19 by the Numbers Dashboard – California Wide and Skilled Nursing Facilities, accessed November 18, 2020.
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- 3. Ibid.
- 4. Centers for Medicare & Medicaid Services, Nursing Home Compare, accessed September 30, 2020.
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- 6. Regression analysis allows statisticians to examine the relationship between factors to estimate the influence of one or more independent variables on a dependent variable.
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- Total staffing hours per resident day (HPRD) combines staffing hours for registered nurses (RNs), licensed vocational nurses (LVNs), and certified nursing assistants (CNAs).
- 11. California Legislative Information, AB-2079 Skilled Nursing Facilities: Staffing, accessed November 3, 2020.

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- 17. Centers for Disease Control and Prevention, Coronavirus Disease 2019 (COVID-19): Health Equity Considerations and Racial and Ethnic Minority Groups, updated July 24, 2020.
- 18. Based on this study, "at-risk" nursing homes have the highest number of significant explanatory factors that put them at increased risk for COVID-19 cases and deaths. They are distinguished from "low-risk" nursing homes, which have a lower number of explanatory factors.
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