Improving Health Care Data in California

Technical Appendices

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Shannon McConville, Paulette Cha, Daniel Tan, and Caroline Danielson

Supported with funding from the California Health Care Foundation
Appendix A. Literature Review

In the first phase of the project, we conducted an in-depth literature review of high-quality research studies that used health care claims data. We performed keyword searches in article databases including PubMed, Google Scholar, Social Services Abstract, and Web of Science and included articles published between 2008 and 2019. We focused on studies that used Medicaid claims, Medicare claims, commercial claims available through private entities such as Optum or Truven, as well as studies that used other state health care payment databases. In total, we reviewed about 85 articles published in peer-reviewed journals, as well as select research reports (i.e. from state agencies) that may not have undergone peer review.

Nearly all of these studies relied on individual-level claims data, often times linked to other sources of information. While there are plans for a California HPD to generate and publish aggregate data products (e.g. state and regional cost estimates for certain diseases), most rigorous analytic studies—both those that are more descriptive in nature and those that seek to identify causal relationships—often must rely on individual-level information and the ability to track individuals over time can expand the types of analytic strategies that can be deployed.

The table below provides a high-level summary of select studies that we reviewed and are referenced in the report. For each, we include reference information, study setting, source of claims data, and a brief summary of the main findings.
<table>
<thead>
<tr>
<th>Authors/Journal</th>
<th>Title</th>
<th>Use Case</th>
<th>Setting</th>
<th>Data source</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkowitz et al. 2019; JAMA Internal Medicine</td>
<td>Association Between Receipt of a Medically Tailored Meal Program and Health Care Use</td>
<td>Evaluation Studies</td>
<td>Massachusetts</td>
<td>State HPD</td>
<td>Participation in the meal program was associated with significantly fewer inpatient and skilled nursing facility admissions compared to matched control group. Mean monthly savings per person were estimated at $753 or a 16% reduction in health care costs associated with receipt of the program.</td>
</tr>
<tr>
<td>Mohlman et al. 2016; Journal of Substance Abuse Treatment</td>
<td>Impact of Medication-Assisted Treatment (MAT) for Opioid Addiction on Medicaid Expenditures and Health Services Utilization in Vermont</td>
<td>Evaluation Studies</td>
<td>Vermont</td>
<td>State HPD</td>
<td>Among Medicaid beneficiaries with a diagnosis for opioid misuse, those that received MAT had significantly lower inpatient admissions and reduced emergency department use compared to those that did not receive MAT. Continuous enrollment in Medicaid was also associated with reduced expenditures.</td>
</tr>
<tr>
<td>Meyers et al. 2019; JAMA Internal Medicine</td>
<td>Association of Team-Based Primary Care with Health Care Utilization and Costs Among Chronically Ill Patients</td>
<td>Evaluation Studies</td>
<td>Massachusetts</td>
<td>State HPD</td>
<td>Patients with 2 or more chronic conditions who received care from physician practices who participated in a 4-year learning collaborative to support team based care experienced a 18.6% reduction in hospitalizations and a 26% reduction in ED visits relative to a matched control group.</td>
</tr>
<tr>
<td>Baker et al. 2014; Health Affairs</td>
<td>Vertical Integration: Hospital Ownership of Physician Practices is Associated with Higher Prices and Spending</td>
<td>Market Consolidation</td>
<td>United States</td>
<td>Commercial claims (Truven Analytics MarketScan)</td>
<td>Vertical integration, in its tightest form, led to significant increases in hospital prices and spending. A one standard deviation increase in a hospitals' market share was associated with a 2 to 6 percent increase in prices and spending. Looser forms of integration did not appear to increase prices and may even decrease hospital admission rates.</td>
</tr>
<tr>
<td>Baker et al. 2016; Journal of Health Economics</td>
<td>The Effect of Hospital/Physician Integration on Hospital Choice</td>
<td>Market Consolidation</td>
<td>United States</td>
<td>Medicare claims data (provider, inpatient, carrier, and denominator files)</td>
<td>Hospital ownership of an admitting physician significantly increased the likelihood that the physician’s Medicare patient would choose the owning hospital. Medicare patients whose admitting physician is not owned by a hospital were more likely to choose facilities that were low-cost and high-quality. Medicare patients were more likely to choose a high-cost, low-quality hospital when their admitting physician’s practice is owned by that hospital.</td>
</tr>
<tr>
<td>Scheffler et al 2018; Health Affairs</td>
<td>Consolidation Trends in California’s Health Care System: Impacts on ACA Premiums and Outpatient Visit Prices</td>
<td>Market Consolidation</td>
<td>California</td>
<td>Commercial claims (IBM MarketScan)</td>
<td>Between 2010 and 2016, the share of primary care physicians in practices owned by hospitals increased from 26% to 38%, while the share of specialty physician owned by hospitals increased from 20% to 54%. Increases in vertical integration were associated with a 9% increase in specialist physician prices and a 5% increase in primary care physician prices.</td>
</tr>
<tr>
<td>Van Nuys et al. 2018 JAMA</td>
<td>Frequency and Magnitude of Co-payments Exceeding Prescription Drug Costs</td>
<td>Out-of-pocket costs</td>
<td>United States</td>
<td>Commercial pharmacy claims (Optum)</td>
<td>About 23% of all pharmacy claims had a patient overpayment and nearly 30% of generic prescriptions had an overpayment. Aggregate overpayment was estimated at $135 million or $10.51 per covered member.</td>
</tr>
<tr>
<td>Authors/Journal</td>
<td>Title</td>
<td>Use Case</td>
<td>Setting</td>
<td>Data source</td>
<td>Main Findings</td>
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</tr>
<tr>
<td>Adler et al 2019; USC-Brookings Schaeffer Initiative on Health Policy</td>
<td>California Saw Reduction in Out-of-Network Care from Affected Specialties after 2017 Surprise Billing Law.</td>
<td>Out of pocket costs</td>
<td>California</td>
<td>Commercial claims (FAIR Health)</td>
<td>The share of physician services considered ‘out-of-network’ declined by 17% for specialty physicians most affected by the 2017 surprise billing law (AB 72) in the period immediately following implementation of the law. This decline was much larger compared to emergency medicine – a specialty not affected by AB 72.</td>
</tr>
<tr>
<td>Xu et al. 2019; JAMA Network Open</td>
<td>Cost-Sharing Disparities for Out-of-Network Care for Adults with Behavioral Health Conditions</td>
<td>Out of pocket costs</td>
<td>United States</td>
<td>Commercial claims (Truven Health MarketScan)</td>
<td>Enrollees in private employer-sponsored insurance plans with behavioral health conditions were more likely to use out-of-network clinicians in both inpatient and outpatient settings than enrollees with chronic conditions including diabetes and congestive heart failure (CHF). Annual cost-sharing for enrollees with mental health conditions was $341 higher than enrollees with diabetes; for those with drug use disorders, it was $1242 more.</td>
</tr>
<tr>
<td>Bindman et al. 2008; Annals of Internal Medicine</td>
<td>Interruptions in Medicaid Coverage and Risk for Hospitalization for Ambulatory Care-Sensitive Conditions</td>
<td>Coverage changes</td>
<td>California</td>
<td>Medicaid claims linked to hospital discharge data</td>
<td>62% of non-elderly adult Medicaid beneficiaries experienced at least 1 interruption in coverage during the study period (1998 – 2002). A Medicaid coverage interruption was associated with a higher risk for hospitalization of ambulatory care-sensitive conditions after controlling for several patient characteristics, co-morbidities, and temporal trends.</td>
</tr>
<tr>
<td>Barnett et al. 2017; Journal of General Internal Medicine</td>
<td>Insurance Transitions and Changes in Physician and Emergency Department Utilization: An Observational Study</td>
<td>Coverage changes</td>
<td>Massachusetts</td>
<td>State HPD</td>
<td>Among Medicaid enrollees, switching insurance carriers was associated with significantly higher increases in new primary and specialty physician visits and a 15% higher rate of ED visits during the month of the coverage switch compared to a matched control group.</td>
</tr>
<tr>
<td>Gordon et al. 2019 Medical Care</td>
<td>Risk Factors for Early Disenrollment from Colorado’s Affordable Care Act Marketplace</td>
<td>Coverage changes</td>
<td>Colorado</td>
<td>State HPD</td>
<td>Nearly 25% of individuals enrolled in Marketplace coverage dropped coverage mid-year. Young adults, children had significantly higher risk of dropping coverage. Individuals that dis-enrolled had greater use of inpatient and ED use before disenrollment compared to those who maintained coverage.</td>
</tr>
<tr>
<td>Lim et al 2018; BMC Health Services Research</td>
<td>Impact of a New York City Supportive Housing Program on Medicaid Expenditure Patterns among People with Serious Mental Illness and Chronic Homelessness</td>
<td>Housing and Whole Person Care</td>
<td>New York City</td>
<td>Medicaid claims linked to jail, homeless shelter, and social service administrative data</td>
<td>Program evaluation of supportive housing program in NYC that targeted Medicaid enrollees with serious mental illness (SMI) and chronic homelessness OR a dual diagnosis of SMI and SUD. Compared utilization and costs compared to control group that was eligible for intervention but was not placed in supportive housing. Estimated Medicaid savings over 2 year period post-intervention was $9526. Savings were largely driven by shorter and fewer psychiatric hospitalizations among those placed in housing.</td>
</tr>
<tr>
<td>Kanzaria et al 2019; Health Affairs</td>
<td>Frequent Emergency Department Users: Focus on Medical Utilization Misses the Whole Person</td>
<td>Housing and Whole Person Care</td>
<td>San Francisco County</td>
<td>San Francisco Department of Public Health Coordinated Care Management System (CCMS)</td>
<td>Frequent users of hospital emergency departments had high use of other public services including county jails, homeless shelters, sobering and detoxification centers, and psychiatric care. Nearly one-third of frequent users had homeless spells, more than 45% had received mental health treatment and nearly 30% had received SUD treatment.</td>
</tr>
<tr>
<td>Authors/Journal</td>
<td>Title</td>
<td>Use Case</td>
<td>Setting</td>
<td>Data source</td>
<td>Main Findings</td>
</tr>
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</tr>
<tr>
<td>Von Wachter et al. 2019; California Policy Lab</td>
<td>Predicting and Preventing Homelessness in Los Angeles</td>
<td>Housing and Whole Person Care</td>
<td>Los Angeles County</td>
<td>Los Angeles County Enterprise Data Linkage</td>
<td>Identified individuals at high-risk of first time homelessness or returns to homelessness among low-income single adults who use county services including county emergency departments, safety net programs, behavioral health treatment, and county jails. Found there is a large and significant spike in service use the 6 months prior to first time homelessness. Between 80-90% of those at risk of returning to homelessness have a history of county services use. Effectively serving the 1% (~20,000) at greatest risk of new homeless spells would prevent nearly 6,900 homeless spells in one year.</td>
</tr>
<tr>
<td>Hammond et al. 2017</td>
<td>Maternal Mental Health Disorders and Reports to Child Protective Services: A Birth Cohort Study</td>
<td>Preventing child maltreatment</td>
<td>California</td>
<td>Vital Statistics – Birth records; Child Protective Services (CPS) data, OSHPD hospital discharge data</td>
<td>About 3% of the more than 550,000 infants born in 2006 were born to mothers with a mental health disorder. Mothers with a mental health disorder were less likely to initiate pre-natal care in the first trimester, and more than 40% also had a documented substance use disorder (SUD). After controlling for several characteristics including maternal age, race, insurance, parity, prenatal care, and substance use, mothers with a mental health disorder were nearly 3X more likely to be reported to CPS compared to mothers without a mental health disorder. For mothers that also had a SUD, the risk was nearly 6X as great.</td>
</tr>
<tr>
<td>Lucenko et al. 2015; Child Abuse and Neglect</td>
<td>Childhood Adversity and Behavioral Health Outcomes for Youth: An Investigation Using State Administrative Data</td>
<td>Preventing child maltreatment</td>
<td>Washington</td>
<td>Washington State Department of Social and Health Services Integrated Client Database</td>
<td>Among children age 12 to 17 who were enrolled in at least one safety net program, 33% had a parent with a mental health condition, 38% had a parent with criminal justice involvement and 37% had family involvement with the child welfare system. Each of this adverse childhood experiences were significantly and independently associated with the likelihood that the adolescent child received treatment for a behavioral health condition.</td>
</tr>
</tbody>
</table>
Appendix B. In-Depth Interviews

Our team conducted in-depth interviews with nine experts. Seven faculty participants were either health services researchers or researchers whose work meaningfully engages with health. Two participants were senior leaders from health data companies. Most of these interviews were conducted by phone, and each lasted approximately one hour. A team of two or three PPIC researchers conducted each interview using a series of questions and prompts. The interviews were semi-structured in that we allowed discussions to evolve organically according to interviewees’ preferences. We coded the resulting interview notes for themes, and our research team decided findings through discussion.

Individuals interviewed:

- Laurence Baker (Stanford University)
- Vance Bauer (OCHIN, non-profit health data company)
- Andrew Bindman (University of California, San Francisco)
- Claire Brindis (University of California, San Francisco)
- David Chen (Nuna, health technology company)
- Rita Hamad (University of California, San Francisco)
- Hilary Hoynes (University of California, Berkeley)
- Emily Putnam-Hornstein (University of Southern California)
- Joanne Spetz (University of California, San Francisco)

Interview protocol

PPIC Research Project on California’s All-Payer Claims Database (APCD) Development

Protocol for Health Services Researchers

Thank you for agreeing to participate in our research project. The interview will last about an hour and will be semi-structured. We will propose general topics and questions, and let the conversation develop organically. If it is acceptable to you, we would like to audio record your interview, as this would provide an accurate record to which we could later refer, and would also allow us to more fully engage during the discussion itself. We would not keep your audio recording beyond the life of this project.

The California Health Care Foundation is funding this research in part, and we anticipate publishing a report on our findings in February 2020. This report will include a list of the people and organizations that we interviewed in an appendix. The information you provide will not be confidential, but we will not attribute any specific comment(s) to an individual or organization. Rather, the information you provide will be synthesized to inform our analysis and conclusions. The second page of this document provides information about your rights as a participant in this project.

We are collecting expert opinions on the following topics to present to California’s Office of Statewide Health Planning and Development (OSAPCD), the state agency charged with designing the APCD. See this website for additional information about their charge and timeline.
1. Your recent experience using health care claims / encounter data
2. The types of health care data that would be most important to include in an APCD for research purposes
3. Examples of linkages to other data that would be most useful to invest in for research purposes
4. Policy issues that stand to gain from evidence produced using an APCD

Examples of specific questions include:

- Aside from accessing the data, have you encountered any challenges using claims data for research? If so, please describe. Do you have any insights or strategies you could share on how you overcame some of these challenges?
- Have you conducted research using claims data from multiple payers? If so, are there unique challenges to using multi-payer claims and how did you overcome them?
- In your past work, did you need but not have some key variables? If so, what were they? Do you know whether these data were collected but unavailable, or never collected?
- How could a database that contains both fee-for-service claims and encounter data from managed care plans be made most useful for the kind of research you do?
- Based on your experience, what would you characterize as the biggest limitations to using claims data to address questions around healthcare utilization, costs, or quality?
- In past work, have you linked claims data to any other health-related data sets (e.g., vital statistics, hospital discharge data, surveys, others)? To any non-health related data sets (e.g., social services program data)? If linking the APCD to other data sets were possible, what datasets would be your top priorities for linkages?
- Are there important research questions—and particularly policy-focused questions—you feel could be newly answered or perhaps better answered if a California APCD were made available to researchers? An APCD linked to some other, high priority datasets?

Please contact any of the following PPIC researchers involved if you have questions or concerns.

Shannon McConville  Paulette Cha  Caroline Danielson
mcconville@ppic.org     cha@ppic.org    danielson@ppic.org
415-291-4481   415-297-4479  415-291-4462

Informed Consent

The Public Policy Institute of California (PPIC), a non-profit research organization, is conducting a study examining high value research uses of an all-payer claims database. A component of the research includes expert interviews and we are requesting your participation by taking part in a 45 – 60 minute interview. The information you provide will be incorporated into a PPIC report focused on research uses of the state’s development of an all-payer claims database. The organizations and names of those interviewed will be included in an appendix of the report, so the information you provide will not be confidential, although no direct attribution will be included in the report.

Your participation in the study is completely voluntary. If you do not wish to participate, we may attempt to contact another person within your organization to participate. If you do participate, you can stop at any time, you do not have to answer any questions for any reason, and you should not feel obligated to discuss any topic with which you are not comfortable.
Appendix C. Online Survey

Our research team fielded an online survey to health services researchers and researchers in related areas. The survey began in July 2019. We primarily invited California-based faculty from universities such as the University of Southern California and UC Davis, and researchers from institutions such as RAND. We also outreached to researchers whose names were submitted to us by survey respondents. Our team followed up every two weeks by email, and our project funder CHCF conducted a final follow-up before the survey closed in early October 2019. These efforts yielded a response rate of 51/66, or 77 percent. We hosted the survey on the Qualtrics platform, and conducted analysis using Stata 15 MP. A list of institutions we outreached to and the survey instrument are below. Tabulations of responses to each of the five questions are provided in Appendix C.

Institutions Contacted for Online Survey:

- California State University Fullerton
- Health Care Cost Initiative
- New York University
- RAND Corporation
- San Francisco State University
- Silicon Valley Data Trust
- Stanford University
- University of California, Berkeley
- University of California, Davis
- University of California, Los Angeles
- University of California, San Diego
- University of California, San Francisco
- University of California, Santa Cruz
- University of Maryland
- University of Southern California
- University of Texas, Austin
- Yale University

Online Survey Instrument

PPIC Survey on a California All-Payer Health Care Claims Database

Screener Question

Are you familiar with the concept of an all-payer claims database?

- [Go to Q1] – take me to the survey!
- [Go to Optional Screen A] – I need a primer
Optional Screen A

Claims are bills sent from health care providers to health insurance companies after a patient has been treated. An all-payer claims database (APCD) would contain payment information on all claims that health insurance has paid. “All-payer” means that the database would collect data generated by all types of insurance—Medicaid / Medi-Cal, Medicare, and private insurance (including exchanges / Covered California).

Outside of an APCD, claims data are usually only available for specific payers. For example, researchers can purchase Medicare data from the federal government, or private health insurance data from companies like Optum. Claims data often lack elements such as patient ID, making it impossible to track individuals longitudinally. In payer-specific data, it is impossible to determine whether individuals are enrolled in multiple simultaneous insurance plans, whether they churn on and off a program like Medi-Cal, or where they go when they leave a plan.

A number of states have created APCDs to increase health care cost transparency and track public health, and some of these states have allowed APCD data to be used for research. California is currently considering whether to establish an APCD and is including the needs of researchers in its planning.
Question 1 of 5

In California, the Office of Statewide Health Planning and Development (OSAPCD) is designing an all-payer claims database (APCD) that is likely to be made available for research purposes. Current priorities for the California APCD are to include four core files: medical claims and encounters, member eligibility, pharmacy claims, and provider information. Unique IDs for patients, providers, and payers are among the priority data elements.

Below, rank your top priorities for research using an APCD according to the following definitions. You may rank as many, or as few, categories as you wish.

1 = highest priority  
2 = next highest priority  
Etc.

___ Health care cost transparency  
(e.g., regional price variation for a type of medical procedure)

___ Health services research  
(e.g., drug prescribing patterns for different types of physicians treating a specific condition)

___ Public health indicators  
(e.g., tracking patterns in measles incidence)

___ Social determinants of health / health disparities  
(e.g., disparities in 30-day hospital readmissions by housing status)

___ Effects of health care policies on health outcomes  
(e.g., changes to health care utilization resulting from a new care coordination program)

___ Effects of non-health-care policies on health outcomes  
(e.g., changes to health care utilization resulting from increased outreach to pregnant women by the WIC nutritional assistance program)

___ Effects of health care policies on non-health outcomes  
(e.g., changes to recidivism resulting from a new care coordination program)

___ Other: ______________________________

___ Other: ______________________________

___ Other: ______________________________

___ Other: ______________________________

Optional: short description of the research question you would study using an APCD (max 2500 characters):

__________________________________________________

Optional comment (max 2500 characters):

__________________________________________________

Submit  [Go to Q2]

Question 2 of 5

In your opinion, which datasets would provide the most research value if linked to the California APCD?
Indicate below the importance of each datasets to your research agenda using the following codes. Score as many, or as few, datasets as you wish.

1 = essential 
2 = beneficial but not essential 
3 = nice to have but not beneficial 

___ Alternative payment model data*
___ Audiology claims/enrollment/providers
___ California Health Interview Survey (UCLA)
___ Characteristics by geography: race, ethnicity, income, housing (US Census)*
___ Child welfare protection (Department of Social Services)
___ Dental claims/enrollment/providers*
___ Earnings and unemployment insurance (Employment Development Department)
___ Geographic identifiers (e.g., ZIP codes or census tracts) for researchers to do own linking
___ Hospital discharges (Office of Statewide Health Planning and Development)*
___ Lab results*
___ Open data products (California Department of Health and Human Services)*
___ Pharmacy rebates*
___ Prescription drug (opioids) monitoring program*
___ Registries for cancer, chronic disease, and immunizations*
___ Safety net program data such as CalWorks, CalFresh, WIC (Department of Social Services)
___ State taxes and CalEITC (Franchise Tax Board)
___ Vision claims/enrollment/providers
___ Vital Statistics (Department of Public Health)*
___ Other: ______________________________
___ Other: ______________________________
___ Other: ______________________________
___ Other: ______________________________
___ Other: ______________________________

* Planned to be included as of June 2019

Optional comment (max 2500 characters):

__________________________________________________

Submit [Go to Q3]
Question 3 of 5

Indicate below any variables that are essential to the research you would conduct using a California all-payer-claims database. Check as many, or as few, boxes as you wish.

- Geographic ID at the following level (e.g., ZIP code): ______________________________
- Individual-level race
- Individual-level ethnicity
- Unique provider ID
- Unique patient ID
- Unique payer ID
- Date of service
- Paid (rather than billed) dollar amounts
- Other: ______________________________
- Other: ______________________________
- Other: ______________________________
- Other: ______________________________
- Other: ______________________________

Optional comment (max 2500 characters):

___________________________________________________________________________

Submit  [Go to Q4]

Question 4 of 5

How likely would you be to apply or submit a proposal to use a California all-payer claims database for research? Select one answer below.

- Very likely
- Likely
- Neutral or don’t know
- Unlikely
- Very unlikely

Optional comment (max 2500 characters):

___________________________________________________________________________

Submit  [Go to Q5]

Question 5 of 5
How much would you be willing to pay to use a California all-payer claims database for a single research project? Select one answer below.

☐ I would only use the data if they were freely available
☐ $1 - $1,000
☐ $1,001 - $5,000
☐ $5,001 - $10,000
☐ $10,001 - $20,000
☐ $20,001 - $50,000
☐ More than $50,000

Optional comment (max 2500 characters):

_____________________________________________________________________________

End

Thank you!

Optional opportunities to comment:

Add any final comments about research using health claims data here (max 2500 characters):

_____________________________________________________________________________

If you have specific studies you would like to point us to, please tell us here (max 2500 characters):

_____________________________________________________________________________

If you know an expert we should contact about this project, submit the name here (max 2500 characters):

_____________________________________________________________________________
Appendix D. Detailed survey tabulations

A total of 51 researchers responded to the online survey described in the previous section. Below we provide frequencies for all five questions. In some cases, responses do not add to 51 because respondents could select multiple options or did not provide a response. The survey refers to all-payer claims databases (APCDs), which are a common name for health care payments databases (HPDs).

Screener Question. Are you familiar with the concept of an all-payer claims database? (Respondents who requested a primer are referred to as new-to-HPDs in the report, while those who skipped it are referred to as HDP-knowledgeable.)

<table>
<thead>
<tr>
<th>HPD Familiarity</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Yes – take me to the survey!</td>
<td>43</td>
</tr>
<tr>
<td>No – I need a primer</td>
<td>8</td>
</tr>
</tbody>
</table>

Q1. Rank your top priorities for research using an APCD according to the following definitions. You may rank as many, or as few, categories as you wish. 1 = highest priority, 2=next highest priority, etc.

<table>
<thead>
<tr>
<th>Research Topic</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; priority</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; priority</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; priority</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects of health care policies on health outcomes</td>
<td>19</td>
<td>16</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td>Health services research</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>Social determinants of health / health disparities</td>
<td>13</td>
<td>10</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>Effects of non-health care policies on health outcomes</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Health care cost transparency</td>
<td>14</td>
<td>5</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Public health indicators</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Effects of health care policies on non-health outcomes</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
Q2. In your opinion, which datasets would provide the most research value if linked to the California APCD? Indicate below the importance of each dataset to your research agenda using the following codes. Score as many, or as few, datasets as you wish. 1 = essential 2 = beneficial but not essential 3 = nice to have but not essential

<table>
<thead>
<tr>
<th>Linkage datasets</th>
<th>Essential</th>
<th>Beneficial, not essential</th>
<th>Nice to have, not essential</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic identifiers (e.g., ZIP codes or census tracts) for researchers to do own linking</td>
<td>43</td>
<td>4</td>
<td>0</td>
<td>47</td>
</tr>
<tr>
<td>Characteristics by geography: race, ethnicity, income, housing (US Census data)</td>
<td>34</td>
<td>9</td>
<td>3</td>
<td>46</td>
</tr>
<tr>
<td>Safety net program data such as CalWORKs, CalFresh (Dept. of Social Services), WIC (Dept. of Public Health)</td>
<td>19</td>
<td>24</td>
<td>2</td>
<td>45</td>
</tr>
<tr>
<td>Hospital discharge data (OSHPD)</td>
<td>30</td>
<td>12</td>
<td>2</td>
<td>44</td>
</tr>
<tr>
<td>California Health Interview Survey (UCLA)</td>
<td>15</td>
<td>22</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Earnings and unemployment insurance (Employment Development Department)</td>
<td>15</td>
<td>24</td>
<td>3</td>
<td>42</td>
</tr>
<tr>
<td>Disease registries for cancer, chronic disease, immunizations</td>
<td>19</td>
<td>19</td>
<td>3</td>
<td>41</td>
</tr>
<tr>
<td>Vital Statistics (Dept. of Public Health)</td>
<td>33</td>
<td>7</td>
<td>1</td>
<td>41</td>
</tr>
<tr>
<td>Laboratory results</td>
<td>18</td>
<td>18</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Child welfare system data (Dept. of Social Services)</td>
<td>10</td>
<td>18</td>
<td>11</td>
<td>39</td>
</tr>
<tr>
<td>Dental claims/enrollment/providers</td>
<td>7</td>
<td>19</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>State taxes and CalEITC (Franchise Tax Board)</td>
<td>13</td>
<td>16</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td>Prescription drug (opioids) monitoring program</td>
<td>10</td>
<td>19</td>
<td>8</td>
<td>37</td>
</tr>
<tr>
<td>Alternative payment model data</td>
<td>15</td>
<td>16</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>Pharmacy rebates</td>
<td>12</td>
<td>15</td>
<td>8</td>
<td>35</td>
</tr>
<tr>
<td>Visual claims/enrollment/providers</td>
<td>2</td>
<td>13</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Open data products (California Health and Human Services Agency)</td>
<td>8</td>
<td>18</td>
<td>7</td>
<td>33</td>
</tr>
</tbody>
</table>

Q3. Indicate below any variables that are essential to the research you would conduct using a California all-payer-claims database. Check as many, or as few, boxes as you wish.

<table>
<thead>
<tr>
<th>Variables needed for research</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique patient ID</td>
<td>48</td>
</tr>
<tr>
<td>Geographic ID at the following level (e.g., ZIP code)</td>
<td>46</td>
</tr>
<tr>
<td>Unique provider ID</td>
<td>44</td>
</tr>
<tr>
<td>Date of service</td>
<td>43</td>
</tr>
<tr>
<td>Individual-level ethnicity</td>
<td>39</td>
</tr>
<tr>
<td>Individual-level race</td>
<td>38</td>
</tr>
<tr>
<td>Paid (rather than billed) dollar amounts</td>
<td>37</td>
</tr>
<tr>
<td>Unique payer ID</td>
<td>33</td>
</tr>
</tbody>
</table>

NOTE: This question allowed respondents to enter their own categories. The majority of responses mentioned either ZIP codes, Census tracts, or county.
Q4. How likely would you be to apply or submit a proposal to use a California all-payer claims database for research? Select one answer below. Check as many, or as few, boxes as you wish. (Figure 1 shows a cross-tabulation of the following values against the Screener Question results.)

<table>
<thead>
<tr>
<th>Likelihood of using HPD</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very likely</td>
<td>36</td>
</tr>
<tr>
<td>Likely</td>
<td>11</td>
</tr>
<tr>
<td>Neutral or don’t know</td>
<td>2</td>
</tr>
<tr>
<td>Unlikely</td>
<td>1</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>0</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
</tr>
</tbody>
</table>

Q5. How much would you be willing to pay to use a California all-payer claims database for a single research project? Select one answer below. (Figure 2 shows a cross-tabulation of the following values against the Screener Question results.)

<table>
<thead>
<tr>
<th>Willingness to pay</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>4</td>
</tr>
<tr>
<td>$1 - $1,000</td>
<td>7</td>
</tr>
<tr>
<td>$1,000 - $5,000</td>
<td>15</td>
</tr>
<tr>
<td>$5,001 - $10,000</td>
<td>11</td>
</tr>
<tr>
<td>$10,001 - $20,000</td>
<td>8</td>
</tr>
<tr>
<td>$20,001 - $50,000</td>
<td>3</td>
</tr>
<tr>
<td>More than $50,000</td>
<td>1</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
</tr>
</tbody>
</table>
Appendix E. OSHPD Review Committee Members

Healthcare Payments Data Review Committee Members:

- Joan Allen (Service Employees International Union – United Healthcare Workers West, representing organized labor)
- Charles Bacchi (California Association of Health Plans, representing health care service plans, including specialized health care service plans)
- William Barcellona (America’s Physician Groups, representing physician groups)
- Cheryl Damberg (RAND Corporation, representing the research community)
- Anne Eowan (Association of California Life and Health Insurance Companies, representing insurers that have a certificate of authority from the Insurance Commissioner to provide health insurance, as defined in Section 106 of the Insurance Code)
- Terry Hill (California Medical Association (CMA) Administrative Medicine Forum, representing “suppliers” defined as a physician and surgeon or other health care practitioner, or an entity that furnishes health care services other than a provider)
- Emma Hoo (Pacific Business Group on Health, representing self-insured employers)
- John Kabateck (National Federation of Independent Business, representing businesses purchasing coverage for employees)
- Amber Ott (California Hospital Association, representing “providers” defined as a hospital, a skilled nursing facility, a comprehensive outpatient rehabilitation facility, a home health agency, a hospice, a clinic, or a rehabilitation agency)
- Ken Stuart (California Health Care Coalition, representing multiemployer self-insured plans that are responsible for paying for health care services provided to beneficiaries or the trust administrator for a multiemployer self-insured plan)
- Anthony Wright (Health Access California, representing consumers)
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