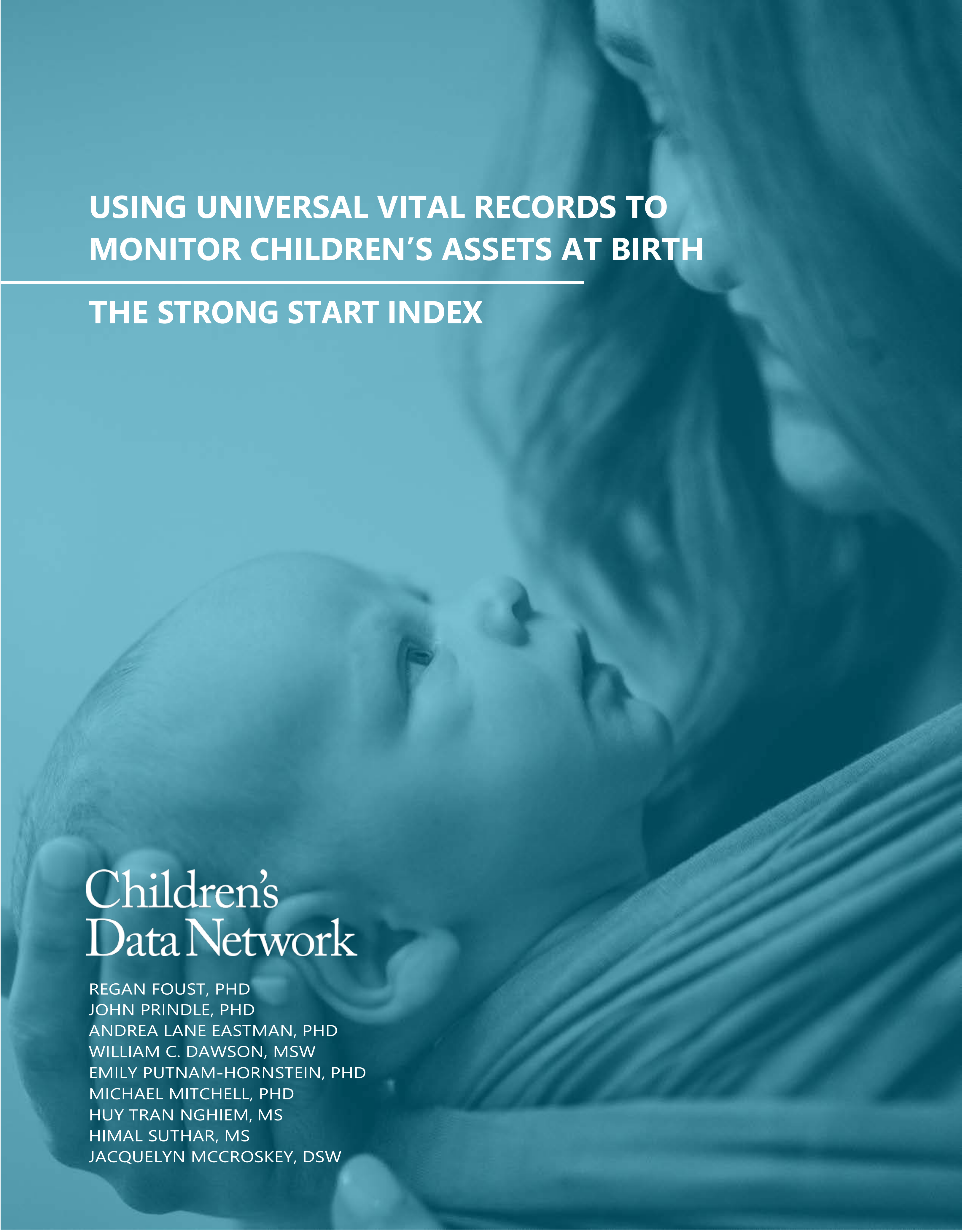

USING UNIVERSAL VITAL RECORDS TO MONITOR CHILDREN'S ASSETS AT BIRTH

THE STRONG START INDEX

Children's Data Network

REGAN FOUST, PHD
JOHN PRINDLE, PHD
ANDREA LANE EASTMAN, PHD
WILLIAM C. DAWSON, MSW
EMILY PUTNAM-HORNSTEIN, PHD
MICHAEL MITCHELL, PHD
HUY TRAN NGHIEM, MS
HIMAL SUTHAR, MS
JACQUELYN MCCROSKEY, DSW

USING UNIVERSAL VITAL RECORDS TO MONITOR CHILDREN'S ASSETS AT BIRTH

THE STRONG START INDEX

ACKNOWLEDGEMENTS

This work was funded through generous project support from First 5 California, and, initially from the Heising-Simons Foundation and the First 5 Center for Children's Policy. We wish to acknowledge our collaborating colleagues at the Children's Data Network and the Supporting a Strong Start for CA Kids Project, First 5 County Commissions, California Child Welfare Indicators Project, and our state and county data partners. Additionally, none of this work would be possible without our core infrastructure supporters: First 5 LA, the Conrad N. Hilton Foundation, and the Reissa Foundation. Their steadfast partnership, keen insights, and ongoing commitment to the children and families of California are critical to the development and continued iteration of the Strong Start Index and to all of our work at the Children's Data Network.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Ideally, every child would be healthy, growing, and thriving in a strong family and supported by a safe and nurturing community. The reality is, however, that the human, social, and material assets present at birth vary widely across California's nearly 400,000 infants born each year. And this variation is not inconsequential. A large and growing body of literature affirms the importance of early childhood experiences in influencing adolescent and adult behavior. The human, social, and material assets present at birth lay the foundation for the emergence of protective factors during childhood that we know are tied to good outcomes and resilience throughout the life course.[1]

Information universally registered at birth can be used to document assets available to each California newborn. Specifically, information regarding infant health and circumstances surrounding the birth (e.g., birthweight, presence of birth abnormalities), family socioeconomic status (e.g., ability to afford and access health care), maternal health behaviors and access to services (e.g., timing of initiation of prenatal care), and the age, education, and nativity of both parents (if paternity is established) all provide insight into the conditions into which individual children are born. Of course, assets and conditions at birth are not destiny. But thoughtful supports and services may be required to ensure that children with fewer assets find themselves on equal footing with their peers in California. Monitoring the distribution of assets among newborns in different communities can help ensure our investments are intentional and equitable.

The Strong Start Index uses data that already exist for children and families to summarize, in a standardized way, the conditions into which children are born. It features 12 variables that fall into four domains. A birth asset score is calculated by simply counting the number of assets present (0–12).

California Strong Start Index Indicators

FAMILY

- Two legal parents
- Born to two nonteen parents
- Born to two parents with at least a high school degree

HEALTH

- Healthy birthweight (greater than 2,500 grams)
- Absence of congenital anomalies, abnormalities, or complications at birth
- Absence of transmissible (mother-to-child) infections

SERVICE

- Access to and receipt of timely prenatal care
- Receipt of nutritional services (WIC) if eligible
- Hospital with higher than the state's average of births with timely prenatal care

FINANCIAL

- Ability to afford and access health care
- Born to at least one parent with a college degree
- Born to two parents with employment history

These asset indicators are universally measured at birth with strong validity and set the stage for the emergence of protective factors and healthy development throughout the life course. A review of the literature and external validity checks confirm that the Strong Start Index adds unique insight into the conditions into which children are born in California and its scores are related to at least two important indicators of child health and well-being (i.e., child protection involvement and death).

When visualized, information on birth records has helped to further our understanding of the distribution of resources among California communities, highlight disparities, and facilitate more equitable investment. Specifically, it has been used as a standardized and cost-effective anchor for community needs assessments; to guide a more strategic stewardship of public dollars, with increased accountability; and to promote the adoption of a common language across communities, commissions, and other stakeholder groups for conceptualizing and discussing early childhood investments.

In addition, the Strong Start Index is being used as the foundation for a direct data collection effort. The project, *Supporting a Strong Start for CA Kids*, involves collecting information about the service needs and experiences of families with young children directly from parents who recently gave birth in California, with a particular focus on children born with relatively few Strong Start assets — children at highest risk of adverse outcomes.

Coupled with information collected from First 5 County Commissions and local service providers, these data will not only better characterize the service landscape at both a local and state level, but also the needs, experiences, and challenges new parents may face in accessing those supports. Overall, this work aims to fill a major gap in our understanding of our most vulnerable Californians and promote a strong start for all children statewide.

Please visit **www.strongstartindex.org** to explore the data and learn more about how communities are using the index to facilitate equitable investment.

INTRODUCTION

Research has consistently demonstrated the developmental significance of the first 5 years of life.[2–5] The conditions and context in which children find themselves during this period—and the nature of family disadvantage or assets that may be present—have lifelong consequences.[6–8] Increased awareness and attention to the importance of investments during early childhood have been accompanied by a growth in policies and programs focused on this period, with many aimed at buffering socioeconomic disparities early in life.[9] Very little population-based information exists, however, to characterize the conditions (e.g., levels of disadvantage versus assets) into which children are born. Common geographic indicators of poverty, crime, and health are often adult focused and may be imperfect proxies for local opportunities or adversities faced by young children.[10–12] Meanwhile, birth- and child-focused geographic indicators (e.g., rates of teen births, infant birthweight) tend to measure a singular dimension of a child's context.[13–15] The absence of a holistic, early childhood-focused measure that captures variations in the circumstances of children limits our ability to make strategic investments in services and programs across communities. This, in turn, affects the speed at which we can expect to make progress on childhood equity goals and reduce disparities in outcomes.[16,17]

In the United States, federal law requires the collection and publication of information concerning births in all states. The National Center for Health Statistics at the Centers for Disease Control and Prevention coordinates the assembly of data on all children born in the United States, publishing natality trends and other reports on the characteristics of births across states and making record-level data available for public health surveillance and research purposes.[13,18,19] In the current paper, we detail our development of a population-based birth index for California, a strengths-based approach to operationalizing assets present when children are born using universally available vital birth record data. Specifically, we: (a) outline the construction of this new public health index using birth records and (b) document the relationship between individual children's asset scores on the index and incidence rates for two other childhood measures (i.e., maltreatment and death).

MATERIAL AND METHODS

DATA SOURCE

Vital records reflecting all births registered in California for calendar years 2016 (*N* = 485,573), 2017 (*N* = 464,356), 2018 (*N* = 452,836), 2019 (*N* = 444,823), 2020 (*N* = 418,957), 2021 (*N* = 419,288), 2022 (*N* = 399,770), and 2023 (*N* = 379,115) were obtained from the Center for Health Statistics and Informatics in the California Department of Public Health (CDPH). All research activities were approved by both state and university human subjects review boards and adhered to strict requirements for data security to ensure the confidentiality of individuals. In California, vital statistics data are prepared pursuant to Health and Safety Code Section 102230. The Vital Statistics Advisory Committee (VSAC) is responsible for reviewing the findings of California's Committee for the Protection of Human Subjects to make recommendations to the state registrar regarding all requests for data from the confidential portion of the birth record.[20]

INDICATORS

We defined 12 indicators based on theoretical considerations, our review of the literature, and distributional examinations of available fields in the vital birth records related to the child, mother, and father or second parent per Assembly Bill 1951 (2014). We constructed each individual indicator from one or more underlying data fields in the birth record. Some fields contribute to more than one indicator (e.g., parent levels of education), and some indicators are conditioned on the presence of underlying information for two parents (e.g., born to two nonteen parents). We adopted a simple 0–1 scoring for the absence or presence of each indicator, with the indicator framed to reflect the positive condition (i.e., presence of the asset). In Appendix A, we detail empirical literature related to fields recorded in vital birth records and chosen for their relationship to subsequent child outcomes.

GEOCODING

We used maternal residential addresses documented in the birth record to assign each birth to a set of geospatial coordinates. Geocoded records were then aggregated by census tract as our proxy for neighborhoods.[21,22] In 2020, California had 9,129 census tracts with an average population of 4,300 each.[23] We identified the residential location of more than 98% of births in the 2016 files and more than 99% of residential locations in 2017–2021. For the 2022 and 2023 years, we relied upon the geolocation provided by CDPH in the Birth Statistical Master Files (BSMF) delivered by CDPH.

In those files, 95.2% of births had designated census tracts. Approximately 5,000 records contained missing addresses in 2016, about 3,000 were missing in 2017, 2018, and 2019, about 2,000 were missing in 2020 and 2021, and, in 2022 and 2023, years for which we relied upon CDPH geocoding, there were about 20,000 missing addresses. We excluded those records from our analysis. After birth records were geocoded, we overlaid shape boundaries of other geographic regions using GIS mapping technology shapefiles. Geographies included counties and legislative districts (both state senate and assembly). We also created subcounty regions for Los Angeles (LA) County based on its eight service planning areas, five supervisorial districts, and Best Start Communities[24,25] (see Appendices B–E).

ETHICAL PROCEDURES

We relied on the California Health and Human Services Agency's data deidentification guidelines to ensure we had aggregated information to prevent risk of exposure of personal characteristics.[26] In accordance with these guidelines, we masked census tracts and all other geographies with fewer than 11 births. Masking resulted in the suppression of about 310 tracts per year (i.e., 290 in 2016, 297 in 2017, 333 in 2018, 320 in 2019, 349 in 2020, 340 in 2021, 265 in 2022, and 290 in 2023) and one county (i.e., Alpine County) for all years. All other tracts, counties, legislative districts, and subcounty regions in LA County met the criteria of 11 or more births during the cohort year. As additional confirmation that scores were sufficiently aggregated to prevent the identification of individuals, we examined the margin of error for each tract relative to the average score. The margin of error serves as a confidence interval for each tract, identifying the expected range of scores. Given that the distribution of scores is not presented for all tracts, the margin of error provides an indication of variability within tracts, not specifically how many births deviate from the average. Using this approach, we verified that we could not identify individual birth index scores after applying statistical masking.

RESULTS

DESCRIPTIVE STATISTICS

ASSETS

In Table 1, we present the number and percentage of births featuring each asset in California's 2019–2023 birth cohorts. For example, in 2023, the presence of assets ranged from a low of 46.9% of children born to at least one parent with a college degree to a high of 99.7% for absence of transmissible (mother-to-child) infections. In Table 2, we document the cumulative number and percentage of births at different asset levels. Statewide, 2023 data indicate that 6.3% (*n* = 23,849) of children had five or fewer assets. Meanwhile, 10.2% (*n* = 38,850) of children in the birth cohort were recorded as having all 12 assets present.

Table 1. Registered births in California: Count and percentage of newborns with specific assets present by year (2019–2023)

	2019		2020		2021		2022		2023	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
All births	444,823	100.0%	418,957	100.0%	419,288	100.0%	399,770	100.0%	379,115	100.0%
Two legal parents established at birth	417,370	93.8%	392,521	93.7%	394,331	94.0%	374,030	93.6%	354,858	93.6%
Born to two nonteen parents	403,610	90.7%	380,482	90.8%	383,142	91.4%	363,432	90.9%	344,908	91.0%
Born to two parents with at least a high school degree	319,557	71.8%	302,022	72.1%	306,137	73.0%	286,217	71.6%	269,073	71.0%
Healthy birthweight (greater than 2,500 g)	413,325	92.9%	390,024	93.1%	388,843	92.7%	370,174	92.6%	350,757	92.5%
Absence of anomalies, abnormalities, or complications at birth	255,406	57.4%	233,632	55.8%	226,674	54.1%	212,280	53.1%	193,072	50.9%
Absence of transmissible (mother-to-child) infections	443,416	99.7%	417,662	99.7%	417,954	99.7%	398,397	99.7%	377,860	99.7%
Access to and receipt of timely prenatal	381,862	85.8%	360,714	86.1%	363,775	86.8%	337,204	84.3%	311,515	82.2%
Receipt of nutritional services (WIC) if	385,836	86.7%	357,075	85.2%	356,460	85.0%	340,553	85.2%	326,269	86.1%
Born in hospital with above average rates of timely prenatal care	273,555	61.5%	267,720	63.9%	267,593	63.8%	244,808	61.2%	231,969	61.2%
Ability to afford and access health care	325,352	73.1%	305,318	72.9%	306,922	73.2%	290,907	72.8%	275,504	72.7%
Born to at least one parent with a college	202,287	45.5%	191,124	45.6%	195,800	46.7%	185,522	46.4%	177,637	46.9%
Born to two parents with employment	268,639	60.4%	244,553	58.4%	243,174	58.0%	229,162	57.3%	217,275	57.3%

Notes: Data for employment is significantly different in 2019/20 from previous years due to missing work date values. Please use caution when comparing data across years.

Table 2. Registered births in California in 2016: Count, percentage, and cumulative percentage of newborns by total number of assets by year (2019–2023)

	2019			2020			2021			2022			2023		
	N	%	cum %	*N*	%	cum %	*N*	%	cum %	*N*	%	cum %	*N*	%	cum %
All births	444,823	100%		418,957	100%		419,288	100%		399,770	100%		379,115	100%	
1 asset	140	0.03%	0.03%	189	0.05%	0.05%	194	0.05%	0.05%	193	0.05%	0.05%	173	0.05%	0.05%
2 assets	1,025	0.23%	0.3%	1,096	0.26%	0.3%	1,113	0.27%	0.3%	1,111	0.28%	0.3%	1,026	0.27%	0.3%
3 assets	3,114	0.70%	1.0%	3,250	0.78%	1.1%	3,278	0.78%	1.1%	3,337	0.83%	1.2%	3,106	0.82%	1.1%
4 assets	7,207	1.62%	2.6%	7,296	1.74%	2.8%	6,971	1.66%	2.8%	7,286	1.82%	3.0%	7,197	1.90%	3.0%
5 assets	13,428	3.02%	5.6%	12,919	3.08%	5.9%	12,725	3.03%	5.8%	12,985	3.25%	6.2%	12,347	3.26%	6.3%
6 assets	23,165	5.21%	10.8%	22,514	5.37%	11.3%	22,008	5.25%	11.0%	22,351	5.59%	11.8%	22,100	5.83%	12.1%
7 assets	40,516	9.11%	19.9%	38,835	9.27%	20.6%	39,515	9.42%	20.5%	40,217	10.06%	21.9%	38,958	10.28%	22.4%
8 assets	62,949	14.15%	34.1%	58,373	13.93%	34.5%	58,921	14.05%	34.5%	58,371	14.60%	36.5%	55,742	14.70%	37.1%
9 assets	72,380	16.27%	50.3%	66,541	15.88%	50.4%	65,373	15.59%	50.1%	62,490	15.63%	52.1%	59,794	15.77%	52.9%
10 assets	77,907	17.51%	67.9%	72,081	17.20%	67.6%	72,385	17.26%	67.4%	68,069	17.03%	69.1%	64,992	17.14%	70.0%
11 assets	89,868	20.20%	88.1%	87,008	20.77%	88.3%	86,841	20.71%	88.1%	79,817	19.97%	89.1%	74,830	19.74%	89.8%
12 assets	53,124	11.94%	100.0%	48,855	11.66%	100.0%	49,964	11.92%	100.0%	43,543	10.89%	100.0%	38,850	10.25%	100.0%

Notes: Data for employment is significantly different in 2019/20 from previous years due to missing work date values. Please use caution when comparing data across years.

LEVEL DISTRIBUTION

In Table 3, we present statewide birth index scores distributed into three levels: Level 1 (8 or fewer assets), Level 2 (9 or 10 assets), and Level 3 (11 or 12 assets). Statewide, newborns in California were born with an average of 9.0 of the 12 indicators, and about one third of all births fell into each of the three levels.

Table 3. Birth assets by level by year (2019-2023)

	Level 1 (8 or fewer assets)		Level 2 (9 or 10 assets)		Level 3 (11 or 12 assets)	
	N	(row) %	*N*	(row) %	*N*	(row) %
All births	727,241	35.3%	682,012	33.1%	652,700	31.7%
2019	151,544	34.1%	150,287	33.8%	142,992	32.1%
2020	144,472	34.5%	138,622	33.1%	135,863	32.4%
2021	144,725	34.5%	137,758	32.9%	136,805	32.6%
2022	145,851	36.5%	130,559	32.7%	123,360	30.9%
2023	140,649	37.1%	124,786	32.9%	113,680	30.0%

Notes: Data for employment is significantly different in 2019/20 from previous years due to missing work date values. Please use caution when comparing data across years.

RACE AND ETHNICITY

In Tables 4a and b, we examine birth index scores stratified by maternal race and ethnicity. Stark differences emerged in the racial and ethnic distributions of Level 1 (babies with 8 or fewer assets) and Level 3 (babies with 11 or 12 assets). Specifically, babies born in 2023 to Asian and Pacific Islander or White mothers were overrepresented among Level 3, whereas babies born to Black or African American mothers, Latina mothers, or mothers of another race or ethnicity were underrepresented relative to their proportion of the population.

In addition, babies born to Asian and Pacific Islander or White mothers were more likely to have 11 or 12 assets than the average baby born in California that year, whereas babies born to Black or African American mothers, Latina mothers, or mothers of another race or ethnicity were more likely to have 8 or fewer assets. Additional stratifications are available in Appendix F.

Table 4a. Racial and ethnic distribution of birth asset levels (2023)

	California		Level 1 (8 or fewer assets)		Level 2 (9 or 10 assets)		Level 3 (11 or 12 assets)	
	N	(col) %	*N*	(col) %	*N*	(col) %	*N*	(col) %
California	379,115		140,649		124,786		113,680	
Black/African American	18,794	5.0%	9,924	7.1%	5,289	4.2%	3,581	3.2%
Latino	187,249	49.4%	89,976	64.0%	64,281	51.5%	32,992	29.0%
White	102,295	27.0%	21,525	15.3%	33,860	27.1%	46,910	41.3%
Asian/Pacific Islander	49,521	13.1%	6,756	4.8%	15,560	12.5%	27,205	23.9%
Other	21,256	5.6%	12,468	8.9%	5,796	4.6%	2,992	2.6%

Table 4b. Birth asset level distribution by maternal race and ethnicity (2023)

	8 or Fewer		9 or 10		11 or 12 Assets	
	N	(row) %	*N*	(row) %	*N*	(row) %
California	140,649	37.1%	124,786	32.9%	113,680	30.0%
Black/African American	9,924	52.8%	5,289	28.1%	3,581	19.1%
Latino	89,976	48.1%	64,281	34.3%	32,992	17.6%
White	21,525	21.0%	33,860	33.1%	46,910	45.9%
Asian/Pacific Islander	6,756	13.6%	15,560	31.4%	27,205	54.9%
Other	12,468	58.7%	5,796	27.3%	2,992	14.1%

CHILD-LEVEL VALIDATION

In addition to community-level validation, we also sought to validate the birth index at the birth or child level using two outcomes: child maltreatment and mortality during the first 5 years of life. These child-level outcomes were chosen because both are objectively poor outcomes that we would hope to prevent and that we expect would be inversely related to asset scores at birth based on the literature documented in Appendix A. We examined the correspondence between a child's scored asset level (0–12) and the absence of an allegation of abuse or neglect before age 5. Similarly, we examined the relationship between a child's scored asset level and postneonatal survival rates through age 5.

Three logistic regression models were fit to measure the predicted probability of a maltreatment allegation as a function of a child's birth index score. For the cohort used, 62,210 children born in 2018 (13.6% of the full birth cohort) experienced a report of alleged maltreatment between birth and age 5 (2023). The quality of model fit for these three models was assessed via pseudo-R2 and area under the receiver operating characteristic curve (AUC). Model 1 included the 12 index indicators, with each indicator dichotomously coded (pseudo-R2 = .131; AUC = .756). Model 2 modeled the count of total asset indicators present, with each count coded as a dichotomous variable (pseudo-R2 = .102; AUC = .725). Model 3 examined the relationship between a child's birth index score and the likelihood of a maltreatment allegation if the score count was coded as a continuous variable (pseudo-R2 = .099; AUC = .725). Although Models 2 and 3 fit somewhat poorer than Model 1, overall, the index exhibited a graded relationship with the predicted probability of child protection involvement before age 5. Specifically, according to Model 2, 52.0% of children with 3 assets were reported for alleged maltreatment, compared with 30.6% of children with 6 assets and 3.3% of children with 12 assets. Model 3, which uses the Strong Start Index total score as a continuous variable, yielded very similar predicted rates of maltreatment: 57.9% with 3 assets, 30.7% with 6 assets, and 4.4% with 12 assets. In other words, the more assets at birth, the less likely children were to become involved with the child protection system during early childhood.

Similarly, three logistic regression models were fit using child death before age 5 as the outcome. Death was restricted to postneonatal deaths (from 1 month after birth until December 31, 2023; n = 845, 0.19%). The same three models described for a maltreatment allegation were examined. Once again, Model 1 produced the best fit (pseudo-R2 = .047; AUC = .708), relative to Model 2 (pseudo-R2 = .022; AUC = .654) and Model 3 (pseudo-R2 = .020; AUC = .654). Again, our birth index demonstrated a graded relationship with risk of postneonatal death. For example, according to Model 2, the death rate of children with 3 assets present at birth was 5.4 per 1,000, compared with a death rate of 3.5 per 1,000 among children with 6 assets and 0.6 per 1,000 among children with 12 assets. Using Model 3, the predicted death rate was 7.1 per 1,000 for those with 3 assets, 3.5 per 1,000 for those with 6 assets, and 0.9 per 1,000 for those with 12 assets. The results show the more assets at birth, the more likely children were to survive through age 5.

DISCUSSION

With the development of this birth index, California can now present a more holistic characterization of children, document the number of assets present at birth, and detail how California communities vary in the distribution of children at different asset levels. Specifically, this index facilitates the identification of communities in which children have fewer assets at birth and where investments in enhanced services and supports may be particularly impactful to promote developmental equity and reduce disparities in childhood outcomes. This index can also be used to characterize how asset levels of children in different communities have changed over time, highlighting where gaps persist, including by race and ethnicity. Organizing vital records using these methods has the potential to: (a) act as a standardized and cost-effective anchor for community needs assessments; (b) guide a more strategic stewardship of public dollars, with increased accountability; and (c) promote the adoption of a common language across communities, commissions, and other stakeholder groups for conceptualizing and discussing early childhood investments. information on birth records has helped to further our understanding of the distribution of resources among California communities, highlight disparities, and facilitate more equitable investment. In addition, in the coming months, the Strong Start scores will be used to develop a population-based sample of parents who recently gave birth in California from whom we will collect information about service needs and experiences. Characterizing the service needs and experiences of families with young children, and, especially, children born into families with the fewest resources, will fill a major gap and make our efforts to improve children's outcomes more intentional and equitable.

The strengths and limitations of this index should be considered when reviewing the data and exploring potential applications. First, we opted to use a single, universal source of existing data to construct the index (i.e., vital birth records). The strength of this approach cannot be understated. Beyond the cost-effectiveness of using existing records, population-based data tend to allow reporting at a more granular level and as such, provide more opportunities for local translation and impact. This approach also avoids many of the pitfalls of survey methods (e.g., cost and questionable generalizability). That said, our reliance on a single source of existing administrative data means that in many cases, we constructed indicators that were crude proxies for the domain in which we were ultimately interested (e.g., birth payment method as a measure of the ability to afford and access health care). We look forward to using integrated administrative data to improve the precision of the index in future iterations.

Second, we chose to implement a simple scoring system to assign a standard (0–1) weight to each indicator.

There are many more methodologically rigorous ways we could have built models to weight the contribution of each indicator to a child's overall score. We avoided more sophisticated methodologies to ensure that individual indicators were intuitive, their weighting easy to understand, and their relationship to children's outcomes clear. We also chose to create a static snapshot of assets based on what we knew of the child at a moment in time (i.e., birth). A focus on assets observable at birth felt strategic given the goal was to develop an index that could guide the outlay of investments in home visiting and other early childhood programs that typically begin during the first year of life. This approach has proven helpful in documenting racial and ethnic disparities in assets recorded at birth at the state and local level, benchmarking in the context of workforce assessments, budgeting for universal and targeted home visiting initiatives, informing community needs assessments and organizational strategic plans, augmenting and validating existing indices, and identifying "resilient" communities (i.e., communities faring better on subsequent developmental or academic assessments than what would be expected using the Strong Start Index).

Third, there are always questions about the reliability and consistency of data fields in administrative records; vital birth data are no exception. We identified very low rates of missingness (< 1%) for most core variables (e.g., parental age), but slightly higher rates of missingness (2%–6%) for others (e.g., parental education, birthweight). The distribution of missingness is likely not random, because some hospitals may be more diligent about entering birth registration data than others. The aggregation of data geographically may amplify the bias introduced by missing or errantly entered information. The nature of our coding decisions means some geographies may have underreported asset levels. Finally, the data for this birth index were limited to children born in California and presented according to maternal residential address at birth. As such, this index is best applied for the allocation of resources delivered around birth and during early childhood; these data may be less applicable as children age.

Constructing a birth index provides a simple, standardized, strengths-based measure for documenting assets at birth for entire cohorts of children. Rather than presenting geographic differences in discrete risk factors, the index we describe in this paper presents a more holistic picture of children's circumstances at birth. In addition, child-level validations confirmed that index scores are inversely related to at least two critical outcomes for children, maltreatment and death. A final differentiating factor is that this birth index leverages existing administrative data, making it a cost-effective, valid, and valuable tool for those working with and on behalf of children and families. Although we present findings for children born in California, information from vital records could be similarly applied to generate a birth index in other states.

LITERATURE CITED

1. Center for the Study of Social Policy. About Strengthening Families and the Protective Factors Framework. Published online 2018. https://cssp.org/wp-content/uploads/2018/11/About-Strengthening-Families.pdf

2. Cunha F, Heckman JJ. The Economics and Psychology of Inequality and Human Development. *J Eur Econ Assoc*. 2009;7(2):320-364. doi:https://doi.org/10.3386/w14695

3. Ermisch J. Origins of Social Immobility and Inequality: Parenting and Early Child Development. *National Institute Economic Review*. 2008;205(1):62-71. doi:10.1177/0027950108096589

4. Heckman JJ. Skill Formation and the Economics of Investing in Disadvantaged Children. *Science*. 2006;312(5782):1900-1902. doi:10.1126/science.1128898

5. Institute of Medicine. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. The National Academies Press; 2000. doi:10.17226/9824

6. Chetty R, Hendren N, Katz LF. The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. *American Economic Review*. 2016;106(4):855-902. doi:10.1257/aer.20150572

7. Jones DE, Greenberg M, Crowley M. Early Social-Emotional Functioning and Public Health: The Relationship Between Kindergarten Social Competence and Future Wellness. *Am J Public Health*. 2015;105(11):2283-2290. doi:10.2105/AJPH.2015.302630

8. Leventhal T, Brooks-Gunn J. The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychol Bull*. 2000;126(2):309-337. doi:https://doi.org/10.1037/0033-2909.126.2.309

9. 113th Congress. Child Care and Development Block Grant Act of 2014 - Public Law 113–186. Published online November 19, 2014. https://www.congress.gov/113/plaws/publ186/PLAW-113publ186.pdf

10. Motivans M. *Federal Justice Statistics 2010 | Statistical Tables*.; 2010:57. https://www.bjs.gov/content/pub/pdf/fjs10st.pdf

11. NCHS Data Visualization Gallery. Leading Causes of Death in the United States, 1999-2016†. CDC Centers for Disease Control and Prevention. Published August 20, 2018. Accessed July 30, 2019. https://www-cdc-gov.libproxy1.usc.edu/nchs/data-visualization/mortality-leading-causes/index.htm

12. Semega JL, Fontenot KR, Kollar MA. *Income and Poverty in the United States: 2016*.; 2017. https://www.census.gov/library/publications/2017/demo/p60-259.html

13. Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. *Births: Final Data for 2015*.; 2017. https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_01.pdf

14. NCHS Data Visualization Gallery. U.S. and State Trends on Teen Births, 1990–2016. CDC Centers for Disease Control and Prevention. Published July 9, 2018. Accessed July 30, 2019. https://www-cdc-

gov.libproxy1.usc.edu/nchs/data-visualization/teen-births/

15. The Annie E. Casey Foundation. 2019 Kids Count Data Book State Trends in Child Well-Being. Published online 2019. https://www.aecf.org/m/resourcedoc/aecf-2019kidscountdatabook-2019.pdf

16. NAEYC. Revised Draft | NAEYC Position Statement: Advancing Equity in Early Childhood Education. Published 2019. Accessed July 30, 2019. https://www.naeyc.org/resources/position-statements/equity-draft

17. National Collaborative for Infants & Toddlers. How to Measure If Infants and Toddlers Are On Track for Success? Measure Impact. Published 2019. Accessed July 30, 2019. https://www.thencit.org/measure-impact

18. Centers for Disease Control and Prevention. National Vital Statistics System: Birth Data. Published 2020. Accessed July 30, 2019. https://www.cdc.gov/nchs/nvss/births.htm

19. National Research Council (US) Committee on National Statistics. *The U.S. Vital Statistics System: A National Perspective*. National Academies Press (US); 2009. Accessed October 29, 2020. https://www.ncbi.nlm.nih.gov/books/NBK219884/

20. California Department of Public Health. Vital Statistics Advisory Committee Meeting Information. Center for Health Statistics and Information. Published 2020. Accessed July 26, 2019. https://www.cdph.ca.gov/Programs/CHSI/Pages/Vital-Statistics-Advisory-committee-Meeting-Information.aspx

21. United States Census Bureau. 2010 Census Tract Reference Maps. United States Census Bureau. Published 2010. Accessed July 30, 2019. https://www.census.gov/geographies/reference-maps/2010/geo/2010-census-tract-maps.html

22. United States Census Bureau. Geography Program. Published 2019. Accessed July 30, 2019. https://www.census.gov/programs-surveys/geography/about/glossary.html

23. United States Census Bureau. 2000 to 2010 Census Tract Population Change. Published online January 17, 2017. https://www.census.gov/data/tables/time-series/dec/metro-micro/tract-change-00-10.html

24. LA County Department of Public Health. Service Planning Areas. Service Planning Areas. Accessed July 26, 2019. http://publichealth.lacounty.gov/chs/SPAMain/ServicePlanningAreas.htm

25. Best Start. First 5 Los Angeles. Accessed June 27, 2022. https://www.first5la.org/best-start-networks/

26. California Health and Human Services. Data De-Identification Guidelines (DDG). Published online September 23, 2016. https://chhsdata.github.io/dataplaybook/documents/CHHS-DDG-V1.0-092316.pdf

27. Child Opportunity Index (COI) | diversitydatakids.org. Accessed June 27, 2022. https://www.diversitydatakids.org/child-opportunity-index

28. Public Health Alliance of Southern California. California Healthy Places Index. Accessed April 30, 2019. https://healthyplacesindex.org/data-reports/

29. Measure of America. A Portrait of California 2014–2015. Accessed April 30, 2019.

http://measureofamerica.org/california2014-15/

30. California Healthy Places Index. Accessed June 27, 2022. https://map.healthyplacesindex.org/?redirect=false

31. Child Opportunity Index 2.0 database - COI 2.0 index data - CKAN. Accessed June 27, 2022. https://data.diversitydatakids.org/dataset/coi20-child-opportunity-index-2-0-database/resource/080cfe52-90aa-4925-beaa-90efb04ab7fb

32. Culhane J, Webb D, Grim S, Metraux S, Culhane D. Prevalence of Child Welfare Services Involvement among Homeless and Low-Income Mothers: A Five-year Birth Cohort Study. *The Journal of Sociology & Social Welfare*. 2003;30(3). https://scholarworks.wmich.edu/jssw/vol30/iss3/6

33. Dubowitz H, Kim J, Black MM, Weisbart C, Semiatin J, Magder LS. Identifying children at high risk for a child maltreatment report. *Child abuse & neglect*. 2011;35(2):96-104.

34. Finno-Velasquez M, Palmer L, Prindle J, Tam CC, Putnam-Hornstein E. A birth cohort study of Asian and Pacific Islander children reported for abuse or neglect by maternal nativity and ethnic origin. *Child Abuse & Neglect*. 2017;72:54-65. doi:10.1016/j.chiabu.2017.07.009

35. Murphey DA, Braner M. Linking child maltreatment retrospectively to birth and home visit records: an initial examination. *Child welfare*. 2000;79(6).

36. Needell B, Barth RP. Infants entering foster care compared to other infants using birth status indicators11Submitted for publication October 13, 1997; final revision received February 9, 1998; accepted May 3, 1998. *Child Abuse & Neglect*. 1998;22(12):1179-1187. doi:10.1016/S0145-2134(98)00096-9

37. Parrish JW, Young MB, Perham-Hester KA, Gessner BD. Identifying risk factors for child maltreatment in Alaska: a population-based approach. *Am J Prev Med*. 2011;40(6):666-673. doi:10.1016/j.amepre.2011.02.022

38. Putnam-Hornstein E, Needell B. Predictors of child protective service contact between birth and age five: An examination of California's 2002 birth cohort. *Children and Youth Services Review*. 2011;33(8):1337-1344. doi:https://doi.org/10.1016/j.childyouth.2011.07.010.

39. Putnam-Hornstein E, Needell B, King B, Johnson-Motoyama M. Racial and ethnic disparities: a population-based examination of risk factors for involvement with child protective services. *Child Abuse Negl*. 2013;37:33-46. doi:10.1016/j.chiabu.2012.08.005

40. Putnam-Hornstein E, Simon JD, Eastman AL, Magruder J. Risk of Re-Reporting Among Infants Who Remain at Home Following Alleged Maltreatment. *Child Maltreatment*. 2014;20(2):92-103. doi:10.1177/1077559514558586

41. Putnam-Hornstein E, Webster D, Needell B, Magruder J. A Public Health Approach to Child Maltreatment Surveillance: Evidence from a Data Linkage Project in the United States. *Child Abuse Review*. 2011;20(4):256-273. doi:https://doi.org/10.1002/car.1191

42. Slack KS, Berger LM, DuMont K, et al. Risk and protective factors for child neglect during early childhood: A cross-study comparison. *Children and Youth Services Review*. 2011;33(8):1354-1363. doi:10.1016/j.childyouth.2011.04.024

43. Williams G, Tonmyr L, Jack SM, Fallon B, Macmillan HL. Determinants of maltreatment substantiation in a sample of infants involved with the child welfare system. *Children and Youth Services Review*. 2011;33(8):1345-1353. doi:10.1016/j.childyouth.2011.04.015

44. Wu SS, Ma CX, Carter RL, et al. Risk factors for infant maltreatment: a population-based study. *Child Abuse Negl*. 2004;28(12):1253-1264. doi:10.1016/j.chiabu.2004.07.005

45. Zhou Y, Hallisey EJ, Freymann GR. Identifying perinatal risk factors for infant maltreatment: an ecological approach. *International Journal of Health Geographics*. 2006;5:53-53. doi:10.1186/1476-072X-5-53

46. Buescher PA, Roth MS, Williams D, Goforth CM. An evaluation of the impact of maternity care coordination on Medicaid birth outcomes in North Carolina. *Am J Public Health*. 1991;81(12):1625-1629.

47. Mathews TJ, MacDorman MF. Infant mortality statistics from the 2004 period linked birth/infant death data set. *National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System*. 2007;55(14):1-32.

48. Putnam-Hornstein E, Schneiderman JU, Cleves MA, Magruder J, Krous HF. A Prospective Study of Sudden Unexpected Infant Death after Reported Maltreatment. *The Journal of Pediatrics*. 2014;164(1):142-148. doi:10.1016/j.jpeds.2013.08.073

49. Putnam-Hornstein E. Report of maltreatment as a risk factor for injury death: A prospective birth cohort study. *Child maltreatment*. 2011;16(3):163-174.

50. Schnitzer P, Ewigman B. Child Deaths Resulting From Inflicted Injuries: Household Risk Factors and Perpetrator Characteristics. *Pediatrics*. 2005;116(5):1209-1293.

51. Folger AT. Maternal Chlamydia trachomatis infections and preterm birth: the impact of early detection and eradication during pregnancy. *Maternal and child health journal*. 2014;18(8):1795-1802.

52. Cederbaum JA, Putnam-Hornstein E, Sullivan K, Winetrobe H, Bird M. STD and abortion prevalence in adolescent mothers with histories of childhood protection involvement. *Perspectives on sexual and reproductive health*. 2015;47(4):187-193.

53. Resnick MB, Gueorguieva RV, Carter RL, et al. The Impact of Low Birth Weight, Perinatal Conditions, and Sociodemographic Factors on Educational Outcome in Kindergarten. *Pediatrics*. 1999;104(6):e74-e74. doi:10.1542/peds.104.6.e74

54. Beimers D, Coulton CJ. Do employment and type of exit influence child maltreatment among families leaving Temporary Assistance for Needy Families? *Children and Youth Services Review*. 2011;33(7):1112-1119.

55. Doidge JC, Higgins DJ, Delfabbro P, Segal L. Risk factors for child maltreatment in an Australian population-based birth cohort. *Child abuse & neglect*. 2017;64:47-60.

56. MacKenzie MJ, Kotch JB, Lee LC. Toward a cumulative ecological risk model for the etiology of child maltreatment. *Children and youth services review*. 2011;33(9):1638-1647.

57. Johnson HL, Ghanem KG, Zenilman JM, Erbelding EJ. Sexually transmitted infections and adverse pregnancy outcomes among women attending inner city public sexually transmitted diseases clinics. *Sexually*

transmitted diseases. 2011;38(3):167-171.

58. Hjern A, Vinnerljung B, Lindblad F. Avoidable mortality among child welfare recipients and intercountry adoptees: a national cohort study. *Journal of Epidemiology & Community Health*. 2004;58(5):412-417.

59. Liu B, Roberts CL, Clarke M, Jorm L, Hunt J, Ward J. Chlamydia and gonorrhoea infections and the risk of adverse obstetric outcomes: a retrospective cohort study. *Sex Transm Infect*. 2013;89(8):672-678.

60. Figlio D, Hamersma S, Roth J. Does prenatal WIC participation improve birth outcomes? New evidence from Florida. *Journal of Public Economics*. 2009;93(1):235-245. doi:10.1016/j.jpubeco.2008.08.003

APPENDICES

APPENDIX A. EVIDENCE FOR INCLUSION IN THE CALIFORNIA STRONG START INDEX, BY INDICATOR

		Lower incidence of child maltreatment or child protection system involvement	Lower risk of infant mortality or stillbirth	Lower risk of early childhoo d mortality	Lower risk of mortality	Lower risk of preterm birth or low birth weight	Reduced prevalence of STDs	Lower risk of adverse educational outcomes
FAMILY								
	Legal parentage established at birth	32–45	46–48	49,50		51	52	53
	Born to nonteen parents	32–41,44,45,54–56	46–48	49,50		51,57		53
	Born to parents with at least a high school degree	32–36,39–42,44,45,54–56	46,47	49,50		51,57		53
HEALTH								
	Healthy birth weight	34,36–40,42,44,45,54,55	47,48				52	53
	Absence of congenital anomalies, abnormalities, or complications at birth	38–41			47,49,58	57,59		53
	Absence of transmissible (mother-to-child) infections	52	59			57,59		
SERVICE								
	Access to and receipt of timely prenatal care	34–36,38–41,44,45,54	46	50		51,57	52	53
	Receipt of nutritional services (WIC) if eligible	33,42,44,54,56				60		
	Hospital with high percentage of births with timely prenatal care	34,38–41,44,45,54,56	46	50		51,57	52	53
FINANCIAL								
	Ability to afford and access health care	34,38–40,42,44,45,54,56	46,48	49,50		51,60		
	Born to a parent with a college degree	39–41	47	49				
	Born to parents with employment history	37,42,54,55						

APPENDIX B. ASSET DISTRIBUTION BY COUNTY (2023)

	Births	Average Strong Start	Babies with 8 or Fewer Assets n	Babies with 8 or Fewer Assets %	Babies with 9 or 10 Assets n	Babies with 9 or 10 Assets %	Babies with 11 or 12 Assets n	Babies with 11 or 12 Assets %
California	379,112	9.1						
Alameda	15,377	9.7	3,800	24.9%	4,402	28.9%	7,047	46.2%
Alpine	LNE		LNE		LNE		LNE	
Amador	276	9.3	74	26.8%	126	45.7%	76	27.5%
Butte	1,965	8.8	778	39.8%	646	33.0%	531	27.2%
Calaveras	356	8.9	127	36.7%	145	41.9%	74	21.4%
Colusa	229	7.7	150	65.5%	56	24.5%	23	10.0%
Contra Costa	10,587	9.7	2,613	24.7%	3,360	31.8%	4,592	43.5%
Del Norte	199	7.9	119	63.0%	57	30.2%	13	6.9%
El Dorado	1,372	9.4	379	27.7%	511	37.4%	478	34.9%
Fresno	12,262	8.4	6,237	51.0%	3,681	30.1%	2,317	18.9%
Glenn	300	9.0	101	33.7%	128	42.7%	71	23.7%
Humboldt	979	8.1	523	54.6%	329	34.4%	105	11.0%
Imperial	2,151	7.0	1,596	74.9%	456	21.4%	80	3.8%
Inyo	126	9.7	28	24.1%	41	35.3%	47	40.5%
Kern	11,222	8.5	5,125	45.7%	4,412	39.3%	1,676	14.9%
Kings	1,882	8.5	818	43.5%	844	44.8%	220	11.7%
Lake	587	8.2	327	55.7%	177	30.2%	83	14.1%
Lassen	180	8.1	82	49.1%	67	40.1%	18	10.8%
Los Angeles	88,159	9.2	31,355	35.7%	27,716	31.6%	28,667	32.7%
Madera	1,972	8.1	1,154	58.5%	549	27.8%	269	13.6%
Marin	2,161	9.2	732	34.4%	700	32.9%	697	32.7%
Mariposa	144	8.7	64	45.1%	48	33.8%	30	21.1%
Mendocino	733	8.1	403	55.3%	256	35.1%	70	9.6%
Merced	3,552	8.4	1,775	50.0%	1,326	37.3%	451	12.7%
Modoc	19	7.9	LNE		LNE		LNE	
Mono	97	9.7	20	20.6%	37	38.1%	40	41.2%
Monterey	5,051	8.4	2,697	53.7%	1,412	28.1%	910	18.1%
Napa	1,180	9.8	255	22.3%	427	37.4%	460	40.3%
Nevada	727	8.6	287	39.5%	332	45.7%	108	14.9%
Orange	28,089	9.7	6,980	25.0%	8,843	31.6%	12,140	43.4%
Placer	3,101	9.4	798	26.3%	1,322	43.6%	915	30.1%
Plumas	101	8.4	34	48.6%	25	35.7%	11	15.7%
Riverside	24,188	9.0	8,805	36.7%	9,281	38.7%	5,919	24.7%
Sacramento	16,336	9.0	5,962	36.6%	5,907	36.3%	4,402	27.1%
San Benito	638	8.8	260	40.8%	215	33.7%	163	25.5%
San Bernardino	23,194	8.5	10,918	47.2%	7,724	33.4%	4,503	19.5%
San Diego	33,753	8.9	12,923	38.3%	12,411	36.8%	8,377	24.8%
San Francisco	6,699	9.9	1,598	24.1%	1,296	19.5%	3,747	56.4%
San Joaquin	8,645	8.5	4,052	46.9%	2,860	33.1%	1,723	20.0%
San Luis Obispo	2,318	8.6	932	41.1%	995	43.9%	341	15.0%
San Mateo	6,975	10.1	1,336	19.2%	1,730	24.9%	3,892	55.9%
Santa Barbara	5,253	8.5	2,635	50.6%	1,597	30.7%	975	18.7%
Santa Clara	17,693	9.8	3,997	22.7%	4,904	27.9%	8,689	49.4%
Santa Cruz	2,066	9.6	553	27.2%	654	32.1%	829	40.7%
Shasta	1,732	8.2	889	51.9%	623	36.4%	200	11.7%
Sierra	LNE	7.4	LNE		LNE		LNE	
Siskiyou	260	8.6	96	41.2%	102	43.8%	35	15.0%
Solano	4,347	8.8	1,749	40.2%	1,648	37.9%	949	21.8%
Sonoma	4,103	9.3	1,222	30.1%	1,488	36.6%	1,353	33.3%
Stanislaus	6,419	8.8	2,699	42.0%	2,170	33.8%	1,550	24.1%
Sutter	1,219	7.1	918	75.8%	227	18.7%	66	5.5%
Tehama	734	7.9	424	57.8%	236	32.2%	74	10.1%
Trinity	81	8.0	43	65.2%	LNE	28.8%	LNE	6.1%
Tulare	6,031	7.7	3,897	64.6%	1,945	32.3%	189	3.1%
Tuolumne	426	8.5	188	44.1%	184	43.2%	54	12.7%
Ventura	8,134	8.9	3,257	40.2%	2,610	32.2%	2,234	27.6%
Yolo	1,725	8.8	642	37.5%	696	40.7%	374	21.8%
Yuba	996	7.4	682	68.5%	229	23.0%	85	8.5%

APPENDIX C. ASSET DISTRIBUTION IN LOS ANGELES COUNTY BY SERVICE PLANNING AREA (SPA; 2019-2023)

	Births	Average Strong Start Score	Babies with 8 or Fewer Assets n	%	Babies with 9 or 10 Assets n	%	Babies with 11 or 12 Assets n	%
LA County	481,020	9.3	156,628	32.6%	160,272	33.3%	164,120	34.1%
SPA 1	24,550	7.9	13,691	55.8%	7,873	32.1%	2,986	12.2%
SPA 2	103,132	9.7	25,947	25.2%	33,590	32.6%	43,595	42.3%
SPA 3	81,691	9.6	21,549	26.4%	27,119	33.2%	33,023	40.4%
SPA 4	46,514	9.2	16,831	36.2%	13,142	28.3%	16,541	35.6%
SPA 5	27,381	10.8	2,462	9.0%	5,936	21.7%	18,983	69.3%
SPA 6	59,927	8.1	33,643	56.1%	19,232	32.1%	7,052	11.8%
SPA 7	64,009	9.1	20,632	32.2%	26,903	42.0%	16,474	25.7%
SPA 8	73,739	9.4	21,854	29.6%	26,444	35.9%	25,441	34.5%

APPENDIX D. ASSET DISTRIBUTION IN LOS ANGELES COUNTY, BY SUPERVISORIAL DISTRICT (SD; 2019-2023)

	Births	Average Strong Start Score	Babies with 8 or Fewer Assets n	%	Babies with 9 or 10 Assets n	%	Babies with 11 or 12 Assets n	%
LA County	481,020	9.3	156,628	32.6%	160,272	33.3%	164,120	34.1%
Supervisorial District 1	94,920	9.0	34,944	36.8%	35,188	37.1%	24,788	26.1%
Supervisorial District 2	106,057	8.6	48,539	45.8%	33,185	31.3%	24,333	22.9%
Supervisorial District 3	90,907	9.7	23,186	25.5%	27,182	29.9%	40,539	44.6%
Supervisorial District 4	94,954	9.6	24,086	25.4%	35,670	37.6%	35,198	37.1%
Supervisorial District 5	94,111	9.5	25,857	27.5%	29,018	30.8%	39,236	41.7%

APPENDIX E. ASSET DISTRIBUTION IN LOS ANGELES COUNTY BY BEST START COMMUNITY (BSC; 2019-2023)

	Births	Average Strong Start Score	Babies with 8 or Fewer Assets n	%	Babies with 9 or 10 Assets n	%	Babies with 11 or 12 Assets n	%
LA County	481,020	9.3	156,628	32.6%	160,272	33.3%	164,120	34.1%
Broadway/Manchester	5,945	7.7	3,782	63.6%	1,706	28.7%	457	7.7%
Central Long Beach	4,673	8.4	2,288	49.0%	1,782	38.1%	603	12.9%
Compton	8,546	8.3	4,316	50.5%	3,258	38.1%	972	11.4%
East LA	6,998	8.8	2,708	38.7%	3,053	43.6%	1,237	17.7%
Lancaster	11,163	7.8	6,420	57.5%	3,555	31.8%	1,188	10.6%
Metro LA	3,634	8.1	2,154	59.3%	966	26.6%	514	14.1%
NE SFV	6,449	8.7	2,698	41.8%	2,442	37.9%	1,309	20.3%
Palmdale	11,152	7.8	6,588	59.1%	3,455	31.0%	1,109	9.9%
Panorama City	8,622	8.6	3,955	45.9%	3,077	35.7%	1,590	18.4%
SELA	8,314	8.5	3,667	44.1%	3,660	44.0%	987	11.9%
South El Monte/El Monte	4,799	8.6	2,140	44.6%	1,734	36.1%	925	19.3%
Watts/Willowbrook	5,642	7.9	3,449	61.1%	1,748	31.0%	445	7.9%
West Athens	2,653	7.9	1,538	58.0%	764	28.8%	351	13.2%
Wilmington	3,298	8.7	1,390	42.1%	1368	41.5%	540	16.4%

APPENDIX F. FIRST 5 LOS ANGELES. BIRTH ASSET LEVEL DISTRIBUTION BY DETAILED RACE / ETHNICITY (2019-2023)

	Average Strong Start Score	Level 1 (8 or fewer assets)		Level 2 (9 or 10 assets)		Level 3 (11 or 12 assets)	
		N	(row) %	*N*	(row) %	*N*	(row) %
California	9.1	727,241	35.3%	682,012	33.1%	652,700	31.7%
Los Angeles County	9.3	156,628	32.6%	160,272	33.3%	164,120	34.1%
Black/African American	8.1	18,198	51.4%	9,850	27.8%	7,338	20.7%
Latino	8.7	111,826	42.4%	98,862	37.5%	53,138	20.1%
White	10.5	12,313	12.0%	27,638	26.9%	62,974	61.2%
Asian	10.5	5,478	11.1%	14,378	29.0%	29,678	59.9%
Pacific Islander	10.3	1,993	13.3%	4,750	31.7%	8,258	55.0%
American Indian / Alaska Native	8.7	610	42.0%	465	32.0%	378	26.0%
Other / Missing	8.5	6,210	48.2%	4,329	33.6%	2,356	18.3%