

California Adolescent Sexual Health Needs Index



2018



California Department of Public Health
Maternal, Child and Adolescent Health Division
Epidemiology, Surveillance and Federal Reporting Branch

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Introduction

Everyone, including young people, deserves access to high-quality sexual and reproductive health information, health care and related support services. California has a long and successful history of providing such support to adolescents.¹ Over the past 20 years, these efforts have been reflected in steadily declining birth rates among California youth aged 15 – 19.² Despite these successes, the number of youths, families and communities impacted by early childbearing remains high. Moreover, ethnic and geographic inequities in adolescent sexual and reproductive health services access and outcomes persist in California. In recognition of these continued challenges across the state, the California Department of Public Health, Maternal, Child and Adolescent Health Division (CDPH/MCAH) within the Center for Family Health developed the California Adolescent Sexual Health Needs Index (CASHNI). This document includes information about the methods used to calculate and interpret CASHNI scores. This index allows CDPH/MCAH and others to provide a fair and just distribution of available resources for adolescent health programs to areas across the state with the greatest inequities in sexual and reproductive health services and outcomes.

A Focus on Social Determinants of Health

Sexual health is defined by the World Health Organization as “a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity.”³ Supporting sexual health in adolescents requires acknowledgement that sexuality is a normative part of development and that adolescents are active agents in their sexual and reproductive choices. Not all adolescents benefit from the same choices, however. Numerous social determinants of health limit individual choices, including systemic racial, ethnic and income inequities, as well as differences in healthcare and educational access and quality.⁴ These inequities, and the related sexual and reproductive health outcomes, can have profound impacts on adolescents’ health statuses throughout their life courses.

Localized Geographic Service Areas

Public health recognizes that racist policies and practices have created segregated living environments with inequitable physical, social and economic opportunities that contribute to health disparities.^{5,6} The county is a commonly used geographic unit for comparing these health outcomes.⁷ In California, there is substantial variation within counties in the number and rate of adolescent births, as well as other data related to sexual and reproductive health that is not obvious when observing overall county rates. To address this within-county variation, CASHNI was developed at the Medical Service Study Area (MSSA) level. MSSAs are clusters of census tracts that do not cross county boundaries and were developed to identify priority areas of unmet need for health care coverage.⁸ MSSAs are recognized by the U.S. Health Resources and

Services Administration, Bureau of Health Professions' Office of Shortage Designation as rational service areas for purposes of designating Health Professional Shortage Areas, Medically Underserved Areas and Medically Underserved Populations. There are currently 542 MSSAs in California which are revised, as needed, with community input following each decadal census. Thus, MSSAs are stable, locally meaningful sub-county geographic units that can be used for identifying program service areas.

Rationale and Description of Indicators

CASHNI indicators were chosen from available California youth data⁹ related to at least one of two broad CDPH/MCAH Title V adolescent health goals: (1) Improve adolescent sexual and reproductive health and wellness; and (2) Increase awareness of and access to youth-friendly services.¹⁰ In total, eight indicators were selected for inclusion in CASHNI. For each of these indicators, a summary of the inclusion rationale is provided below (see technical notes for more information). Unless noted, all data are from 2018 (where 2018 is the “end year” of either a three-year or a five-year aggregated datapoint).

1. The average number of annual live births (NLB) to the birthing population aged 19 years and younger¹¹ is an indicator of parenting youth and the minimum adolescent population in need of sexual and reproductive health services in an MSSA. Early childbearing, especially those births resulting from mistimed or unwanted pregnancies,¹² can be avoided through access to health services and high-quality programs that meet adolescents’ needs and empower them to make informed decisions about their sexual and reproductive health.
2. The adolescent birth rate (ABR)¹³ is a commonly used indicator of adolescent sexual health and well-being. The ABR reflects the rate of adolescent births per 1,000 adolescent females across geographies with different population sizes. The ABR is included in CASHNI calculation because early childbearing has been linked with increased medical risks and emotional, social and financial costs to young parents and their children.¹⁴
3. Suboptimal interpregnancy interval (subIPI)¹⁵ describes births resulting from pregnancies conceived less than 18 months after previous live births. Repeat births such as these that occur within short time intervals increase the risk of negative health outcomes for the birthing individual and infant.^{16,17} Parents who experience short interpregnancy intervals may require additional resources to reach adequate access to reproductive and other health care services, as well as academic and employment opportunities.¹⁸

4. The gonorrhea and chlamydia (GIR-CT) incidence rate (2014-2016)¹⁹ is an indicator of adolescent sexual health outcomes beyond pregnancy prevention. This indicator reflects the combined incidence of gonorrhea and chlamydia. Incidence of chlamydia is significantly higher than that of gonorrhea, especially among young people; racial and ethnic disparities in both persist.²⁰ The GIR-CT incidence rate reflects the need for preventive sexual and reproductive health services among youth.
5. The percentage of 10 – 24-year-olds living in areas of concentrated poverty (PYP)²¹ reflects the severely limited resources and opportunities for young people living in areas of concentrated poverty. Consistent with the social determinants of health framework, this is an area-based indicator rather than an individual measure of income to capture systemic influences of income disparities.
6. The percentage of 10 – 24-year-olds living in racially isolated areas (RIS)²² is a measure of the inequality likely experienced by youth living in areas where high proportions of residents are members of racial and ethnic minority groups. Due to a history of systemic racism, racially isolated areas tend to have few neighborhood resources and opportunities for employment and education, leading to suboptimal population health outcomes.^{23,24}
7. The percentage of 18 – 24-year-olds without a high school diploma or equivalent (PWD)²⁵ reflects community-level educational disparities. School attendance may increase the likelihood of receiving sexual health information and services through mandated education. In addition, high school graduation is associated with a range of positive life outcomes including better employment opportunities and, potentially, improved access to health care.²⁶
8. Rural and urban status (RUS)²⁷ reflects MSSA-level resources available for delivering sexual and reproductive health programming. Rural populations have reduced health care access compared to urban populations, a disparity that is well documented.^{28,29} In addition, youth living in rural areas face additional challenges in accessing sexual and reproductive healthcare such as increased confidentiality concerns in small, close-knit communities, limited public transportation options and the need to travel long distances to pharmacies and health clinics.³⁰

Calculation of CASHNI Scores

The MSSA level CASHNI Score is calculated as follows:

- a. The ABR, subIPI, GIR-CT, PYP, RIS, PWD are standardized to the normal distribution and summed to form an index of overall community measure of disparities.³¹
- b. Overall community disparity is ranked from 1 to 5 based on the distribution of sums, and rankings are multiplied by 3 for rural MSSAs.³²
- c. Resulting values (range 1 – 15) are multiplied by the age-adjusted NLB.³³

What CASHNI Score Means

CASHNI scores range from 0 to 1943 across California's 542 MSSAs (see Table 1 for a list of CASHNI scores for each MSSA organized by county).³⁴ A higher score indicates a greater community need for adolescent sexual and reproductive health services.

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Table 1. List of California MSSAs and 2018 California Adolescent Sexual Health Needs Index

Alameda

MSSA ID	MSSA Name	CASHNI
2d	Fruitvale/Melrose/Oakland Airport	420
2h	Ashland/Brookfield Village/Castro Valley South/Elmhurst/Hayward Northeast/San Leandro North Central/San Lorenzo East	136
2c	Oakland West Central	81
2n	Hayward Central	78
2g	San Leandro West/San Lorenzo West/Hayward West	31
2m	Dimond/Montclair/Oakland East/Oakmore/Piedmont/Piedmont Pines/Trestle Glen	27
2f	Castro Valley Central and North/Oak Knoll/San Leandro Northeast/Sheffield Village/Union City East	21
2j	Centerville/Fremont West/Irvington/Newark East Central	17
2a	Berkeley South and West/Emeryville/Oakland Northwest	15
2e	Alameda/Jack London Square/Oakland Inner Harbor	15
1.2	Altamont/Livermore East/Midway/Mountain House/Scotts Corner	10

MSSA ID	MSSA Name	CASHNI
2i	Fremont South/Mission San Jose/Newark South/Warm Springs	6
2l	Fremont East/Niles/Union City Central	6
1.1	Livermore Central and West/Spring Town	*
2k	Dublin/Pleasanton/Santa Rita/Sunol	*
2b	Albany/Berkeley East and North/Claremont/Cragmont /Forest Park/Rockridge/ Temescal/ Thousand Oaks	*

Alpine

MSSA ID	MSSA Name	CASHNI
3	Alpine Village/Bear Valley/Kirkwood/Markleeville/Mesa Valley/Woodfords	*

Amador

MSSA ID	MSSA Name	CASHNI
4	Ione/Jackson/Pine Grove/Sutter Creek	36
5	Plymouth	*
6	Pioneer	*

Butte

MSSA ID	MSSA Name	CASHNI
10	Oroville/Palermo/Thermalito	311
9	Biggs/East Biggs/Gridley	72
7.1	Chapmantown/Chico	61
8	Magalia/Paradise/Stirling City	30
7.2	Capay/Lake/Nord	6
7.4	Durham	*
11	Berry Creek/Brownsville/Concow/ Feather Falls/Forbestown	*
7.3	Butte Meadows/Cohasset/ Forest Ranch	*

Calaveras

MSSA ID	MSSA Name	CASHNI
12	Angels Camp/Arnold/ Copperopolis/Mountain Ranch/Murphys/ San Andreas/Valley Springs/ West Point	56

Colusa

MSSA ID	MSSA Name	CASHNI
15	Colusa	39
16.1	Williams	32
16.3	Arbuckle/Grimes	*
16.2	Loduga/Maxwell/Princeton/ Stonyford	*

Contra Costa

MSSA ID	MSSA Name	CASHNI
18f	Richmond Central/ San Pablo Central	336
18d	Antioch North and West/Nichols/Pittsburg Central and East/West Pittsburg	236
18e	Brentwood Central and West/Oakley	68
18b	Concord West/Martinez East/Martinez Waterfront/ Pacheco/Pleasant Hill East	47
18c	Avon/Clyde/Concord Central/Pittsburg Southwest	31
17	Brentwood East/Byron/ Discovery Bay/Knightesen	24
18g	El Cerrito/El Sobrante/ Kensington/Richmond North/Richmond Southeast/ Wildcat Canyon	13
18a	Crockett/Hercules/Martinez West/Pinole/Port Costa/ Richmond Northeast/Rodeo	10
18h	Alamo/Danville/Diablo/ San Ramon	*
18j	Clayton/Concord South/ Walnut Creek Central and East	*
18i	Lafayette/Martinez South/ Moraga/Orinda/Pleasant Hill/Rheem Valley/Rossmoor Leisure World/Walnut Creek Southwest	*

Del Norte

MSSA ID	MSSA Name	CASHNI
19	Crescent City/Gasquet/ Klamath/Smith River	164

El Dorado

MSSA ID	MSSA Name	CASHNI
24	South Lake Tahoe	39
23.3	Cool/Diamond Springs/Latrobe/Pilot Hill/Placerville	34
23.2	Camino/Pollock Pines	32
22	Garden Valley/Georgetown/ Greenwood/Kelsey/ Volcanoville	*
23.1	Cameron Park/El Dorado Hills/Shingle Springs	*

Fresno

MSSA ID	MSSA Name	CASHNI
30	Bowles/Caruthers/Easton/ Kingsburg/Lanare/Laton/ Raisin City/Riverdale/Selma	1062
32	Orange Cove/Parlier/ Reedley/Squaw Valley/Tivy Valley/Wonder Valley	634
35d	Fresno East Central	598
35e	Fresno South and West	591
25	Firebaugh/Mendota	548
35c	Fresno West Central	545
31	Auberry/Calwa/Centerville/ Clovis East/Del Rey/Fowler/ Friant/Sanger/Shaver Lake	420
29	Biola/Herndon/Highway City/Kerman	242
35b	Clovis West/Fresno East	177
27	Coalinga	152
35f	Fresno North Central	144

MSSA ID	MSSA Name	CASHNI
28	Huron	123
26	Cantua Creek/San Joaquin/ Tranquility	72
35a	Fresno Northwest	24

Glenn

MSSA ID	MSSA Name	CASHNI
36.1	Orland	89
36.2	Hamilton City	21
37	Artois/Elk Creek/Glenn/Grindstone Indian Rancheria/Willows	9

Humboldt

MSSA ID	MSSA Name	CASHNI
39	Arcata/Eureka	106
42	Ferndale/Fortuna/Rio Dell/ Scotia	55
40	Bluelake/McKinleyville/Orick/ Trinidad	40
44	Garberville/Redway	*
38	Hoopa/Willow Creek	*

Imperial

MSSA ID	MSSA Name	CASHNI
49	Calexico/Ocotillo	745
48	El Centro/Heber/Holtville/ Imperial/Seeley	732
50	Brawley/Westmorland	316
47	Bombay Beach/Calipatria/ Desert Shores/Niland/Salton City/Salton Sea Beach	95
46	Bard/Winterhaven	8

Inyo

MSSA ID	MSSA Name	CASHNI
53	Bishop/Bishop Paiute Tribe/ Mustang Mesa/Round Valley/ West Bishop/Wilkerson	33
55	Alabama Hills/Cartago/ Darwin/Keeler/Lone Pine/Lone Pine Paiute Shoshone Tribe/ Olancho/Pearsonville	*
54	Aberdeen/Big Pine/Big Pine Reservation/ Fort Independence Indian/ Independence	*

Kern

MSSA ID	MSSA Name	CASHNI
66b	Bakersfield East/Lakeview/ La Loma	1144
61	Arvin/Lamont/Weed Patch	1038
58.2	Lost Hills/Wasco	553
66a	Bakersfield Northeast/Oildale	386
60	Delano/McFarland	372
57.2	Blackwell/Æs Corners/ Ford City/Maricopa/ McKittrick/Taft	338
65	Boron/California City/ Desert Lake/Mojave/North Edwards/Rosamond	314
66c	Bakersfield Southwest	303
58.1	Shafter	260
62	Bear Valley Springs/Keene/ Stallion Springs/Tehachapi	116
64	Inyokern/Ridgecrest	106
66d	Bakersfield Northwest/ Rosedale	65

MSSA ID	MSSA Name	CASHNI
63	Alta Sierra/Bodfish/ Glennville/Kernville/ Lake Isabella/Weldon/ Wofford Heights	31
59	Buttonwillow	27
57.1	Fort Tejon/Frazier Park/ Lebec/ Pine Mountain	6

Kings

MSSA ID	MSSA Name	CASHNI
68	Corcoran/Kettleman City/ Stratford	340
69	Armona/Hanford/Lemoore	239
67	Avenal	228

Lake

MSSA ID	MSSA Name	CASHNI
71.1	Clearlake/Clearlake Oaks	268
70.2	Lucerne/Nice/Upper Lake	54
70.1	Kelseyville/Lakeport	53
71.2	Lower Lake	8
71.3	Cobb/Hidden Valley/ Middletown	*

Lassen

MSSA ID	MSSA Name	CASHNI
72	Susanville	102
74	Doyle	*
75	Westwood	*
73	Bieber/Madeline/Nubieber	*

Los Angeles

MSSA ID	MSSA Name	CASHNI
78.2fff	Firestone/Florence South/ Watts	788
78.2ggg	South Central Northeast	626
77.1c	Lancaster Central/ Palmdale North Central	616
78.2ooo	Paramount North/Willowbrook	568
78.2mmm	Downtown Southeast/ Florence North	491
78.2s	South Central Southwest	488
78.2h	Boyle Heights Central/ City Terrace West	455
78.2ss	Pomona East and South	454
78.2bbb	Compton East	444
78.2jjj	Long Beach West Central	400
78.2b	Pico-Union	370
78.2p	Long Beach Port/ San Pedro East/Wilmington	364
78.2d	City Terrace East/ East Los Angeles	358
78.2uuu	Athens/Gardena Northeast/ Harbor Gateway North	347
78.2oo	El Monte/Five Points	343
78.2ll	Arleta/Pacoima West/ Panorama City/ San Fernando West	333
78.2c	Bell Northeast/ Bell Gardens/Commerce/ Maywood/ Montebello South	315
77.1a	Palmdale Central	299
78.2ddd	Bell Southwest/Cudahy/ Vernon	287

MSSA ID	MSSA Name	CASHNI
78.2ccc	Huntington Park/ South Gate West/ Walnut Park	275
78.2nnn	Crenshaw/Culver City East/Mid-City South/ West Adams	257
78.2ppp	Pacoima East/ Sun Valley West	250
78.2l	Exposition Park/ Leimert Park	237
78.2ffff	Boyle Heights Northwest/Chinatown/ Downtown Northwest/ Little Tokyo/Westlake	231
78.2iii	North Long Beach	204
78.2i	El Sereno North/ Highland Park/Montecito Heights/Monterey Hills	199
78.2r	Inglewood East/Lennox	190
78.2cc	Van Nuys Central	181
78.2sss	Downey Southwest/ Lynwood North Central/ South Gate East	181
78.2e	Country Club Park/Koreatown/ Mid- City East	177
77.2	Lake Los Angeles	171
78.2yyy	Bassett/Industry West/ La Puente	170
78.2k	South Central Northwest	169
78.2m	Bellflower/ Paramount South	145
78.2hhhh	Canoga Park Northeast/ Winnetka	144
78.2zzz	Baldwin Park/Irwindale	140

MSSA ID	MSSA Name	CASHNI
77.1b	Desert View Highlands/ Lancaster West/ Palmdale Northwest/ Quartz Hill	136
78.2gg	Angeles National Forest West/Kagel Canyon/Lake View Terrace/San Fernando East/Sylmar	132
78.2zz	Northridge South/ Reseda North	132
78.2kk	North Hills/ Northridge North	131
78.2www	Valinda/West Covina	122
78.2bbbb	Gardena West/Hawthorne	118
78.2jjj	Norwalk/Studebaker	109
78.2ww	Pico Rivera/ Santa Fe Springs Northwest	107
78.2bb	North Hollywood Central and North	106
78.2v	Carson/Compton West/ Rancho Dominguez	103
78.2lll	Bixby Knolls/ Long Beach Central	82
78.2hhh	Altadena West/ Pasadena Northwest	79
78.2g	Hollywood South Central/ Inner Sunset	77
78.2aaaa	Harbor Gateway South/Lomita/ Torrance East Central	75
76.1b	Newhall/Santa Clarita East/Valencia	74
78.2qq	Asuza/Charter Oak/Covina	74
77.3	Juniper Hills/Littlerock/ Longview/Pearblossom/ Valyermo	72

MSSA ID	MSSA Name	CASHNI
78.2vv	Los Nietos/ Santa Fe Springs Northeast	62
78.2q	Del Aire/Inglewood West/ Los Angeles International Airport	58
78.2qqq	Rosemead/San Gabriel South/South El Monte West/Temple City West	58
78.2eee	Downey Northeast	54
78.2n	Cerritos/Hawaiian Gardens	53
78.2uu	La Habra Heights/Whittier	52
78.2iiii	Gardena Southeast/Harbor Gateway Central/Lawndale South/Moneta/Redondo Beach North/Torrance North	36
78.2ff	Glassell Park/Glendale Southeast/Silverlake North	33
78.2gggg	Altadena East/Angeles National Forest East/Azusa North/Duarte North/Glendora/Pasadena East	30
78.2pp	Hacienda Heights/Industry Central	30
77.5	Elizabeth Lake/Gorman/ Green Valley/Lake Hughes/ Leona Valley/Neenach	27
78.2z	Mar Vista/Ocean Park/ Santa Monica South/Venice	24
78.2x	Hancock Park/ Mid-City West/Park La Brea	20
78.2xxx	Arcadia Central and Northeast/Bradbury/ Monrovia/Sierra Madre	19

MSSA ID	MSSA Name	CASHNI
78.2tt	Claremont/ La Verne/ Pomona Northwest/ San Dimas	18
78.2eeee	Alhambra/El Sereno South/San Gabriel Central	16
78.2nn	Montebello North/ Monterey Park/ South San Gabriel	16
78.2kkk	Belmont Shore/ Long Beach East/ Long Beach Shoreline/ Los Altos/Naples	14
78.2ii	Reseda South/ Van Nuys Southwest	13
78.2rrr	La Mirada/ Santa Fe Springs South	13
78.2cccc	Chatsworth	12
78.2dd	Burbank South/Eagle Rock/Glendale Northwest	12
76.2	Castaic/Val Verde	11
78.2ee	Atwater Village/Glendale Central/Glendale Southwest/Griffith Park	10
78.2o	Miraleste/Palo Verdes Estates/Portuguese Bend/ Rancho Palos Verdes/ Rolling Hills/ San Pedro West	10
76.1a	Canyon Country/ Santa Clarita West/Saugus	9
78.2dddd	Arcadia Southeast/ San Gabriel North	9
78.2ttt	Burbank North/North Hollywood South	8
78.2a	Echo Park/Hollywood North Central/Silverlake South	7

MSSA ID	MSSA Name	CASHNI
78.2j	Baldwin Hills/Culver City South/Fox Hills/ Ladera Heights/ Marina del Rey/View Park/Windsor Hills	6
78.2rr	Glendale Northeast/ La Canada-Flintridge/ La Crescenta/Montrose/Su nland/Tujunga/Verdugo City	6
78.2vvv	Diamond Bar/Industry East/Phillips Ranch/Pomona West/Walnut	6
78.2f	Hollywood Hills/Hollywood West/Mount Olympus/ West Hollywood	*
78.2hh	Granada Hills/Mission Hills/ Porter Ranch	*
78.2xx	Agoura Hills/Calabasas/ Hidden Hills/West Hills/ Westlake	*
78.2jj	Sherman Oaks/Studio City/ Valley Village	*
78.2mm	Pasadena South/San Marino/South Pasadena	*
78.2t	Hermosa Beach/Lawndale North/Manhattan Beach/Redondo Beach North	*
78.2y	Culver City North/Palms	*
77.4	Acton/Ravenna	*
78.1	Avalon	*
78.2yy	Encino/Tarzana/Warner Center/Woodland Hills	*

MSSA ID	MSSA Name	CASHNI
78.2kkkk	Santa Monica Central/ Sawtelle/West Los Angeles	*
78.2u	Redondo Beach Central and South/Torrance West Central	*
78.2w	Century City/Cheviot Hills/Rancho Park/West Los Angeles/Westwood	*
78.2aa	Bel Air/Beverly Glen/ Beverly Hills/Brentwood/ Malibu/Pacific Palisades/ Santa Monica Northwest/Topanga	0

Madera

MSSA ID	MSSA Name	CASHNI
80	Madera	1630
79.2	Chowchilla	104
79.1	Oakhurst/Yosemite Lakes	32

Marin

MSSA ID	MSSA Name	CASHNI
83b	Bel Marin Keys/ Black Point/Ignacio/Novato/ San Rafael East/ Santa Venetia	57
82	Angel Island/Belvedere/ Marin City/Sausalito/ Strawberry Manor/Tiburon	*
83a	Corte Madera/Fairfax/ Kentfield/Larkspur/Marinwo od/Mill Valley/Ross/ San Anselmo/San Rafael West/Terra Linda	*
81	Bolinas/Dillon Beach/ Inverness/Point Reyes Station/Stinson Beach/ Tomales	0

Mariposa

MSSA ID	MSSA Name	CASHNI
85	Bootjack/Cathey/Es Valley/Coulterville/Don Pedro/El Portal/Fish Camp/Mariposa	39
86	Yosemite Valley	0

Mendocino

MSSA ID	MSSA Name	CASHNI
93.1	Ukiah	152
91	Brooktrails/Pine Mountain/Willits	60
92	Covelo/Dos Rios	24
90	Laytonville/Leggett/Piercy	14
93.4	Talmage	11
89	Fort Bragg/Westport	10
93.5	Hopland	6
93.2	Redwood Valley	*
87.1	Boonville/Navarro/Philo/ Yorkville	*
87.2	Elk/Little River/Mendocino	*
88	Anchor Bay/Gualala/ Manchester/Point Arena	*
93.3	Potter Valley	*

Merced

MSSA ID	MSSA Name	CASHNI
97.2	El Nido/Merced Southwest	555
94	Dos Palos/Gustine/Los Banos	465
96	Atwater/Snelling/Winton	393
95	Ballico/Cressey/Delhi/ Hilmar/Livingston	246
97.1	Merced Central and North/Merced Southeast	159
97.3	Le Grand/Planada	58

Modoc

MSSA ID	MSSA Name	CASHNI
100	Adin/Lookout/Newell	*
98	Alturas/Canby	*
99	Surprise Valley	*

Mono

MSSA ID	MSSA Name	CASHNI
103	Mammoth Lakes	8
102	Benton/Bridgeport/Chalfant/ Crowley Lake/Coleville/ Hammill Valley/June Lake/ Lee Vining/Paradise/Sunny Slopes/Topaz/Walker	*

Monterey

MSSA ID	MSSA Name	CASHNI
109.2	Salinas/Spreckels	814
107	Chualar/Gonzalez/Greenfield /Soledad	800
109.1	Aromas/Las Lomas/Pajaro/Prunedale	299
105	King City/San Lucas	275
108	Carmel Valley/Castroville/Marina/ Moss Landing/Ord	65
110	Carmel/Del Rey Oaks/ Monterey/Pacific Grove/ Sand City/Seaside	12
106	Bradley/San Ardo	*
104	Big Sur/Lucia	0

Napa

MSSA ID	MSSA Name	CASHNI
112.1	Napa Central	19
112.2	Napa Northeast/Rutherford/ Yountville	18
111.2	Calistoga	*
111.1	Angwin/Deer Park/St. Helena	*
112.3	American Canyon	*
111.3	Berryessa	*

Nevada

MSSA ID	MSSA Name	CASHNI
113	Grass Valley/Nevada City/Penn Valley/Rough and Ready/Wildwood	28
114	North Bloomfield/ North San Juan/Truckee	14

Orange

MSSA ID	MSSA Name	CASHNI
116b	Santa Ana Central	533
116g	Santa Ana South	373
116l	Anaheim Central	292
116c	Anaheim West	182
116r	Garden Grove North/Stanton	160
116i	Garden Grove South/Santa Ana West	143
116q	Anaheim East/City of Orange North/Placentia Southwest	107
116h	City of Orange South/ Santa Ana North/Tustin Foothills/Tustin West	97
116f	Fullerton Central and South	85
116s	Huntington Beach North/Seal Beach East/Westminster	71

MSSA ID	MSSA Name	CASHNI
116p	Costa Mesa	61
116a	Buena Park/La Palma	53
116k	Brea West/Fullerton North/La Habra	29
116n	Anaheim Hills/City of Orange East/Villa Park	23
115.1	Dana Point/San Clemente/San Juan Capistrano	22
115.2a	Lake Forest East/Mission Viejo Central and South	13
116m	Brea East/Placentia Central and North/Yorba Linda	11
115.2c	Aliso Viejo/Laguna Hills/Laguna Niguel	10
115.2d	Laguna Beach/Laguna Woods	10
116e	Cypress/Los Alamitos/Rossmoor	10
115.2b	Coto de Caza/Las Flores/ Mission Viejo Northwest/ Rancho Santa Margarita/ Trabuco Canyon	6
116j	Fountain Valley/Huntington Beach Central	6
116u	Huntington Beach West/ Seal Beach West	*
116o	Irvine Central/Tustin East	*
116t	Huntington Beach South	*
116v	Foothill Ranch/IrvineNortheast/Lake Forest West/Portola Hills/Tustin East	*
116d	Irvine South/Newport Beach/Newport Coast/San Joaquin Hills	*

Placer

MSSA ID	MSSA Name	CASHNI
121.1	Roseville	40
119	Auburn/Newcastle/Lincoln/ Sheridan	30
117	Dollar Point/Kings Beach/ Sunnyside/Tahoe City/Tahoe Vista	13
118	Colfax/Meadow Vista	11
121.2	Rocklin/Granite Bay	9
120	Foresthill	*

Plumas

MSSA ID	MSSA Name	CASHNI
123.1	Bucks Lake/Cromberg/East Quincy/Greenhorn/Keddie/L aporte/Little Grass Valley/Meadow Valley/Quincy/Sloat/Spring Garden	30
124	Beckwourth/Chilcoot/ Crocker Mountain/Delleker/ Iron Horse/Lake Davis/ Maybe/Portola/Valley View/ Vinton	6
122	Belden/Caribou/Crescent Mills/Genessee/Greenville/ Indian Falls/North Arm/ Storrie/Taylorville/Tobin/ Twain	*
123.2	Blairsdon/Clio/C-Road/Gold Mountain/Greagle/ Johnsville/Mohawk Meadows/Mohawk Vista/Plumas Eureka/Plumas Pines/Sierra Springs/Valley Ranch/White Hawk	*

MSSA ID	MSSA Name	CASHNI
125	Bailey Creek/Canyondam/ Chester/Eastshore/ Foxwood/Hamilton Branch/ Lake Almanor Peninsula/ Lake Almanor Peninsula/ Lake Almanor West/ Prattville/ Warner Valley	*

Riverside

MSSA ID	MSSA Name	CASHNI
128	Arabia/Coachella/Desert Beach/Flowing Wells/Indio South/La Quinta East/ Mecca/Oasis/Thermal	463
129.4	Cathedral City Southeast/Palm Desert North/Palm Springs South/Rancho Mirage North	355
132	East Hemet/Hemet/Valle Vista	298
133.1	Canyon Lake/Perris/Quail Valley/Romoland/Sun City/ Winchester	297
133.3	Glen Valley/Mead Valley	290
135a	Eastside/Fairmont Park/ Riverside Downtown/Rubidoux/Univer sity	241
135d	Arlington/Corona East/Home Gardens/La Sierra/Riverside Southwest	224
126	Blythe	206
135b	Edgemont/Orange Crest/Woodcrest	189
134	Banning/Beaumont/Cabizon /Calimesa/Cherry Valley	183

MSSA ID	MSSA Name	CASHNI
129.2	Bermuda Dunes North/Indio North	157
135c	Casablanca/Riverside Central	146
135g	Moreno Valley	138
131a	Lake Elsinore/Murrieta West/Sedco Hills/Wildomar	109
135e	Corona North/Glen Avon/Jurupa/Norco	92
133.2	Homeland/Lakeview/ San Jacinto	33
135f	Corona South/ El Cerrito/Temescal	29
131b	French Valley/Murrieta East/Temecula/Winchester	24
127	Chiriaco Summit/Desert Center/Eagle Mountain	23
129.1	Bermuda Dunes South/Indian Wells/La Quinta West/Palm Desert/Rancho Mirage Central and South	20
129.3	Agua Caliente/Palm Springs Central	15
131c	Temecula South	9
130	Idyllwild/Pine Cove	8

Sacramento

MSSA ID	MSSA Name	CASHNI
139j	Capitol Park/Del Paso Heights/Downtown/ Gardenland/North Sacramento	432
139k	Freeport/Meadowview	338
139f	Florin/Fruitridge/Oak Park/Parkway/South Sacramento	330

MSSA ID	MSSA Name	CASHNI
139c	Antelope/Citrus Heights/Foothill Farms	133
139g	East Sacramento/La Riviera/Mather/Rancho Cordova/Rosemont	116
139a	Elverta/Natomas/North Highlands/Rio Linda	113
139h	Elk Grove/Laguna/Laguna West/Lakeside	87
136	Clay/Galt/Herald/Wilton	71
139d	Arcade/Arden/Town and Country Village	66
137	Clarksburg/Hood/Isleton/Locke/Walnut Grove	33
139i	Greenhaven/Land Park/Midtown/Pocket/Riverside/Sutterville	24
139b	Carmichael/Fair Oaks/Gold River	15
139l	Vineyard	15
139m	Central South Elk Grove/Franklin	12
139e	Folsom/Orangevale	7
138	Rancho Murieta/Sloughhouse	*

San Benito

MSSA ID	MSSA Name	CASHNI
140	Hollister/Paicines/Panoche/San Juan Bautista	155

San Bernardino

MSSA ID	MSSA Name	CASHNI
145.2	Adelanto/Phelan/Pinon Hills/Victorville Northwest	930
151g	Muscoy/San Bernardino Central	781

MSSA ID	MSSA Name	CASHNI
149	Barstow/Daggett/Lenwood/Nebo Center/Oro Grande/Yermo	646
151k	Highland/San Bernardino East	609
151f	Bloomington/Colton Central and West/Fontana South/Rialto South	447
151h	Fontana Central/Rialto Central	424
145.1a	Hesperia West/Mountain View Acres/Victorville Central and South	391
151c	Montclair/Ontario Northwest/Upland South	337
144.2	Joshua Tree/Landers/Morongo Valley/Rimrock/Yucca Valley	200
145.1b	Apple Valley/Hesperia East	185
144.3	Cadiz/Twenty-nine Palms	165
151l	Chino Northeast/Fontana Southwest/Ontario South	149
151b	Ontario Northeast/Rancho Cucamonga South	82
151e	Fontana North/Rancho Cucamonga Northwest/Rialto Northeast	76
151i	Colton Southeast/Grand Terrace/Loma Linda/Redlands North	73
151a	Chino Hills/Chino West Central/Los Serranos/Sleepy Hollow	57
146	Big Bear Lake/Fawnskin/Moorridge/Running Springs/Sugarloaf	50

MSSA ID	MSSA Name	CASHNI
150	Baker/Harvard/ Newberry Springs	40
147	Blue Jay/Crestline/Lake Arrowhead/Skyforest/ Twin Peaks	38
144.1	USMC Air-Ground Combat Training Center	22
151j	Mentone/Redlands South/Yucaipa	22
142	Argus/Borosalvay/Trona	20
151d	Rancho Cucamonga Northwest/San Antonio Heights/Upland North	13
145.3	Lucerne Valley	*
148	Lytle Creek/Wrightwood	*
143	Big River/Needles	*

San Diego

MSSA ID	MSSA Name	CASHNI
161g	Encanto/Lemon Grove Northwest/Lincoln Acres/National City East/Paradise Hills Southwest	283
161j	Castle Park/Chula Vista Southwest/Imperial Beach West/Nestor East/Palm City/San Ysidro/South San Diego	270
156e	Escondido Central and South/San Marcos Central and East	247
161k	Chula Vista Central and Northwest/National City West	237
161c	Downtown/Golden Hill/Logan Heights	233

MSSA ID	MSSA Name	CASHNI
161d	Chollas Creek/City Heights/East San Diego/North Park/Oak Park/South Park	211
156d	Oceanside East/San Marcos West/Vista	134
161h	El Cajon Central and South/Fletcher Hills	107
161l	Lemon Grove South/Paradise Hills	89
161s	Cockatoo Grove/Eastlake Greens/Otay Mesa	87
161f	La Mesa/Rolando South	85
156a	Encinitas Central/Leucadia/Oceanside North and West/San Luis Rey/South Oceanside	73
159	Buckman Springs/Canyon City/Jacumba/Morena Village/Tecate	62
161i	Calavo Gardens/Casa de Oro/Cottonwood/Grossmon t/Homelands/Lemon Grove Central and North/Mount Helix/Rancho San Diego/Spring Valley	50
161u	Bostonia/Glenview/Granite Hills/Hillsdale/Johnstown/La keside/Riverview/Winter Gardens	38
161e	College Heights/Hillcrest Southeast/Kensington/Rolan do North/University Heights	32

MSSA ID	MSSA Name	CASHNI
160	Bonsall/Camp Pendleton/Fallbrook/Live Oak Park/Rainbow/San Luis Rey Heights/Winterwarm	31
158.1	Ramona/Rock Haven/Rosemont	30
156f	Escondido East/Hidden Meadows/Poway North	19
157	Dulzura/Engineer Springs/Indian Springs/Jamacha/Jamul	18
153.1	Pala/Pauma Valley	17
156b	Carlsbad East/Encinitas East/Oceanside East	17
161a	Clairemont/Fiesta Shores/Linda Vista/Mission Beach/Sorrento/University City	17
161t	Bonita/Chula Vista East/Eastlake/La Presa/Lynwood Hills/Rancho del Rey/Sunnyside/Sunny Vista	16
153.2	Rincon/San Pasqual/Valley Center	13
155	Alpine/Blossom Valley/ Crest/Descanso/Glen Oaks/ Harbison Canyon/Japatul/ Palo Verde	13
156c	Cardiff by the Sea/Eden Gardens/Harmony Grove/La Costa/Ocean Hills/Lomas Santa Fe/Olivehain/Rancho Santa Fe/San Marcos South/Solana Beach/Vista South	10

MSSA ID	MSSA Name	CASHNI
161m	Carlton Hills/El Cajon North/Eucalyptus Hills/Lake Murray/Loma Portal/San Carlos/Santee	10
161b	Bay Park/Five Points/ Hillcrest Northwest/ Mission Hills/ Mission Valley/Morena/Normal Heights/Old Town/Serra Mesa	9
161v	Mira Mesa/Scripps Miramar Ranch	9
161o	Allied Gardens/Del Cerro/Grantville/Miramar/Ti errasanta	8
161p	Carmel Valley/Del Dios/Escondido South/Fairbanks Ranch/Poway Southeast/Rancho Bernardo Southeast/Rancho Penasquitos	7
161n	Civic Center/Coronado/ Harbor Island/Imperial Beach East/Nestor West/Ocean Beach/Point Loma/Silver Strand	6
152	Borrego Springs/Cuyamaca/ Julian/Kentwood in the Pines/Laguna/Ocotillo Wells/Palomar/Pine Valley/Warner Springs	*
161q	Poway Central/Poway Grove/Rancho Bernardo Southwest/Sabre Springs	*
154	Barona/Moreno	*

MSSA ID	MSSA Name	CASHNI
158.2	Ballena/Four Corners/San Diego Country Estates	*
161r	Crown Point/Del Mar/La Jolla/Pacific Beach	*

San Francisco

MSSA ID	MSSA Name	CASHNI
162f	Bayview/Candlestick/Hunters Point/Portola/Visitacion Valley	96
162a	Chinatown/Civic Center/Inner Mission/North Beach/South of Market/Tenderloin/Western Addition	41
162c	Bernal Heights/Mission District/Potrero Hill	16
162d	Excelsior/Glen Park/Ingleside/Lake Merced/Merced Heights/Ocean Beach South/Park Merced/Saint Francis Wood/Westwood Park	15
162g	Buena Vista/Castro/Eureka Valley/Forest Hill/Haight-Ashbury/Noe Valley/West of Twin Peaks	*
162h	Laurel Heights/Ocean Beach North/Richmond/Sutro Heights	*
162b	Cow Hollow/Financial District/Marina/Nob Hill/Pacific Heights/Russian Hill/Seacliff	*
162e	Golden Gate Park/Parkside/Sunset/West Portal	*

San Joaquin

MSSA ID	MSSA Name	CASHNI
169b	French Camp/Stockton South/Stockton Southeast	689
169a	Stockton North Central/Stockton Northeast	259
167	Lockeford/North Woodbridge	127
169c	Stockton Northwest/Stockton West	115
166	Lodi	102
164.2	Banta/Escalon/Ripon/Vernalis	69
163	Tracy	58
164.1	Lathrop/Manteca	58
168	South Woodbridge/Thornton	28
165	Farmington/Linden	*

San Luis Obispo

MSSA ID	MSSA Name	CASHNI
173	El Paso de Robles/Lake Nacimiento/San Miguel/Shandon	147
171	Arroyo Grande/Nipomo/Oceano/Pismo Beach	123
172	San Luis Obispo	38
174	Baywood/Cambria/Cayucos/Morro Bay/Los Osos	17
170	Atascadero/Templeton	8

San Mateo

MSSA ID	MSSA Name	CASHNI
176b	East Menlo Park/East Palo Alto/North Fair Oaks/Redwood City East	155
175.1	El Granada/Half Moon Bay/Miramar/Montara/Moss Beach/Princeton by the Sea/Skyline	38
176f	Foster City/Redwood Shores/San Mateo East	21
176a	Brisbane/Burlingame Northeast/Colma/Daly City East/Millbrae East/San Bruno/South San Francisco	16
176d	Broadmoor Village/Daly City West/San Bruno Northwest/Serramonte/Westborough	16
176c	Atherton/Lindenwood/Menlo Oaks/Menlo Park/Redwood City Central/Sharon Heights/West Menlo Park/Woodside/Woodside Hills	15
176e	Burlingame Hills/Burlingame Southwest/Hillsborough/Hillside/Millbrae West/San Bruno Central/San Mateo West	*
175.2	La Honda/Loma Mar/Pescadero/San Gregorio/Sky Londa	*
175.3	Pacifica/Rockaway Beach/San Pedro Terrace/Sharp Park/Valleamar	*

MSSA ID	MSSA Name	CASHNI
176g	Belmont/Devonshire/Emerald Lake/Farm Hills/Palomar Park/San Carlos West/The Highlands	*

Santa Barbara

MSSA ID	MSSA Name	CASHNI
180.1	Orcutt/Santa Maria	895
179	Lompoc/Mission Hills/Vandenberg	321
180.2	Guadalupe	102
181a	Goleta South/Isla Vista/Santa Barbara South	24
177	Carpinteria/New Cuyama/Summerland/Toro Canyon	11
181b	Goleta North/Mission Canyon/Montecito/Riviera/Santa Barbara North	8
178.1	Buellton/Los Olivos/Santa Ynez/Solvang	*
178.2	Los Alamos	*

Santa Clara

MSSA ID	MSSA Name	CASHNI
182	Gilroy/Morgan Hill/Rucker/San Martin	225
183e	Alum Rock South/San Jose East	190
183h	San Jose Southeast	147
183j	San Jose Northwest	86
183d	Downtown San Jose	79
183b	Berryessa/East San Jose/Milpitas East	25
183i	Alviso/Palo Alto Bayshore/Santa Clara Northwest/Sunnyvale North	20

MSSA ID	MSSA Name	CASHNI
183g	Cambrian Village East/San Jose South Central	14
183k	Evergreen/San Jose East Central	14
183o	Milpitas West/Santa Clara Northeast	12
183n	Santa Clara South and West	11
183i	New Almaden/San Jose Southwest	9
183m	Cambrian Village West/Campbell South/Los Gatos/Monte Sereno/San Tomas	8
183c	Sunnyvale South	7
183a	Los Altos/Los Altos Hills/Palo Alto Central/Stanford	*
183f	Cupertino/Rancho Rinconada/San Jose West/Saratoga	*

Santa Cruz

MSSA ID	MSSA Name	CASHNI
184	Freedom/Watsonville	201
185.5	Amesti/Corralitos/Day Valley/Interlaken/Pajaro Dunes	53
185.1	Aptos/Capitola/Live Oak/Rio del Mar/Santa Cruz	10
185.3	Ben Lomond/Felton/Scotts Valley	*
185.2	Davenport	*
185.4	Boulder Creek	*

Shasta

MSSA ID	MSSA Name	CASHNI
186	Anderson/Cottonwood/French Gulch/Happy Valley/Igo/Ono/Platina/Shasta	129
189.2	Redding	102
189.3	Bella Vista/City of Shasta Lake	86
190	Burney/Cassel/Fall River Mills/Hat Creek/McArthur	47
187	Castella/Lakehead/OÆBrien	13
188.2	Manton/Millville/Shingletown/Viola	6
188.1	Big Bend/Montgomery Creek/Oak Run/Round Mountain	*
189.1	Palo Cedro	*

Sierra

MSSA ID	MSSA Name	CASHNI
191	Alleghany/Calpine/Downieville/Goodyear Bar/Sattley/Sierra City/Sierraville	*

Siskiyou

MSSA ID	MSSA Name	CASHNI
195	Gazelle/Grenada/Hilt/Hornbrook/Yreka	72
197	Carrick/Edgewood/Mount Shasta/Weed	23
193	Happy Camp	7
194	Etna/Fort Jones/Greenview	*
198	Dunsmuir	*
196	Tulelake	0
199	McCloud/Tennant	0
200	Dorris/Macdoel/Mount Hebron	0

Solano

MSSA ID	MSSA Name	CASHNI
204	Vallejo	160
202b	Fairfield	138
201	Dixon	32
202a	Vacaville	25
203.1	Benicia/Collinsville/ Suisun City	8
203.2	Rio Vista	*

Sonoma

MSSA ID	MSSA Name	CASHNI
210.1	Santa Rosa	115
209.1	Petaluma	25
205.1	Geyserville/Healdsburg	13
208	Boyes Hot Springs/Glen Ellen/Kenwood/Sonoma/ Vineburg	9
210.2	Bodega/Sebastopol	7
206	Cloverdale	6
209.2	Two Rock/Valley Ford	6
205.2	Windsor	*
207	Forestville/Fort Ross/ Guerneville/Jenner/ Monte Rio/Occidental/Sea Ranch	*

Stanislaus

MSSA ID	MSSA Name	CASHNI
215c	Ceres/Modesto South Central	479
214	Hughson	239
211	Oakdale/Riverbank	156
213	Crows Landing/Empire/Grayson/ Newman/Patterson/Westley	151
212.1	Denair/Turlock	114
212.2	Keyes	113
212.3	Salida	79
215a	Modesto West	73
215b	Modesto East	68

Sutter

MSSA ID	MSSA Name	CASHNI
321	Meridian/Robbins/Yuba City	321
21	Live Oak	21
2	Nicolaus/Pleasant Grove	*

Tehama

MSSA ID	MSSA Name	CASHNI
222	Corning/Los Molinos/Tehama/Vina	200
221	Gerber/Los Flores/ Proberta/Red Bluff	183
219	Paskenta/Rancho Tehama	12
220	Dairyville/Manton/Mineral/ Paynes Creek	6

Trinity

MSSA ID	MSSA Name	CASHNI
224	Douglas City/Lewiston/Trinity Center/Weaverville	17
225	Forest Glen/Hayfork/ Hyampom/Peanut	*
223	Junction City/Salyer	*
226	Kettenpom/Mad River/Ruth/Xenia	0

Tulare

MSSA ID	MSSA Name	CASHNI
231	Alpaugh/Earlimart/Pixley/ Porterville/Rich Grove/ Terra Bella	1943
230	Tipton/Tulare/Woodville	840
228.2	Exeter/Lemon Cove/Lindsay/Strathmore	492
233	Farmersville/Goshen/Visalia	335
228.1	Ivanhoe/Woodlake	248
227.1	Dinuba	129
227.2	Cutler-Orosi	100
232	Springville	20
229	Three Rivers	*

Tuolumne

MSSA ID	MSSA Name	CASHNI
236	East Sonora/Mi-Wuk Village/ Soulsbyville/Tuolumne City/Twain Harte	28
234.2	Columbia/Jamestown/Sonora	10
235	Big Oak Flat/Groveland	*
234.1	Chinese Camp	0

Ventura

MSSA ID	MSSA Name	CASHNI
241b	Oxnard North Central	541
237	Fillmore/Los Padres National Forest/Piru/Santa Paula/ Saticoy	228
241a	Oxnard East/Oxnard West/Oxnard South Central/Port Hueneme	171
241c	Ventura	41
238	Meiners Oaks/Oak View/Ojai	36
239	Camarillo/Moorpark	18
240b	Thousand Oaks Central and West	10
240c	Simi Valley West/Thousand Oaks East	10
240a	Simi Valley East	9

Yolo

MSSA ID	MSSA Name	CASHNI
246.1	Woodland	50
245	Bryte/Broderick/Clarksburg/ Riverview/West Sacramento	41
242	Winters	24
243	Esparto/Rumsey	20
246.2	Knights Landing	14
244	Davis	7

Yuba

MSSA ID	MSSA Name	CASHNI
249	Marysville	371
248	Wheatland	*
247	Browns Valley/Brownsville/ Dobbins/Oregon House	*

*CASHNI score between 1 and 5.

Figure 1. Map of 2018 California CASHNI Scores, by MSSA

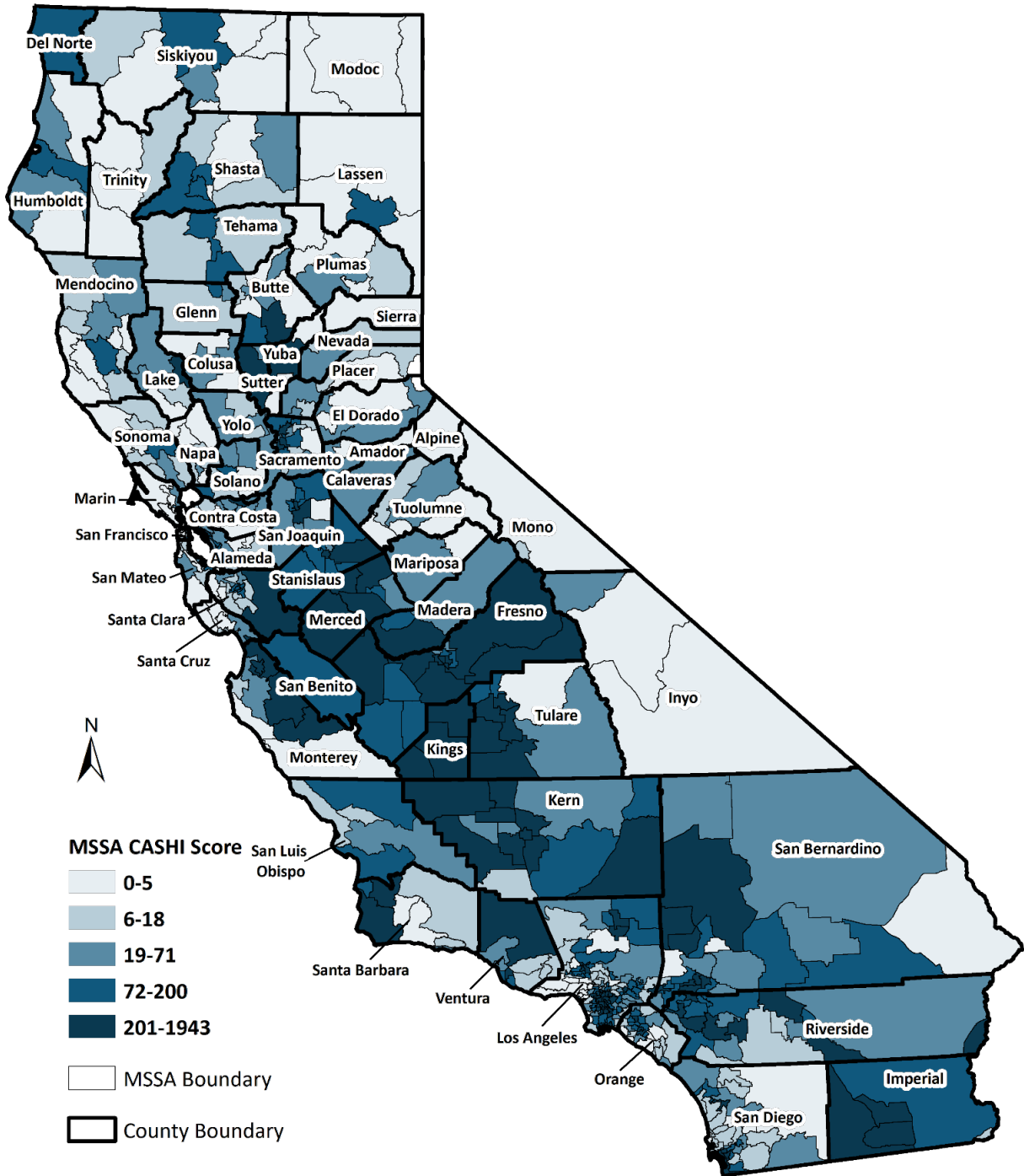
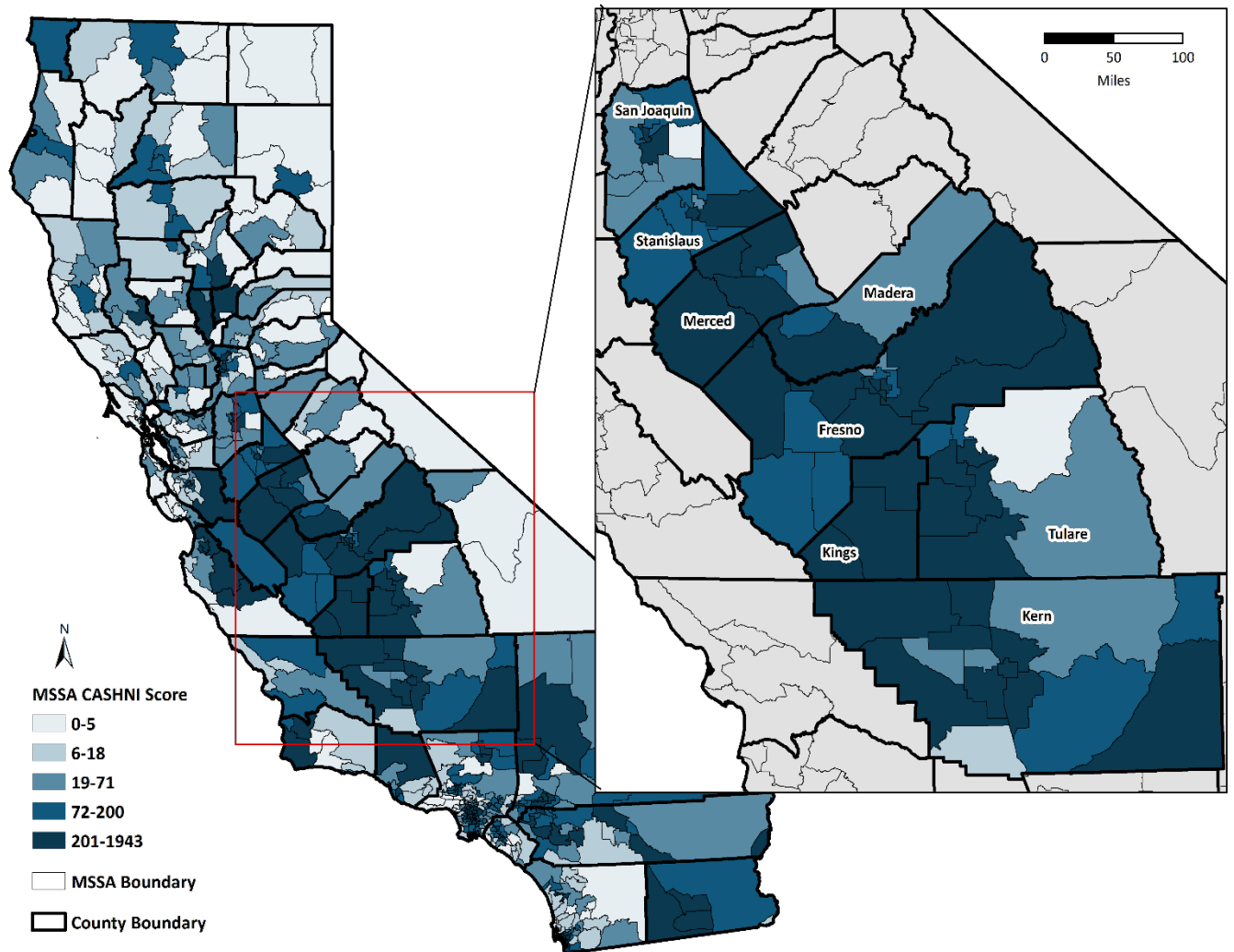
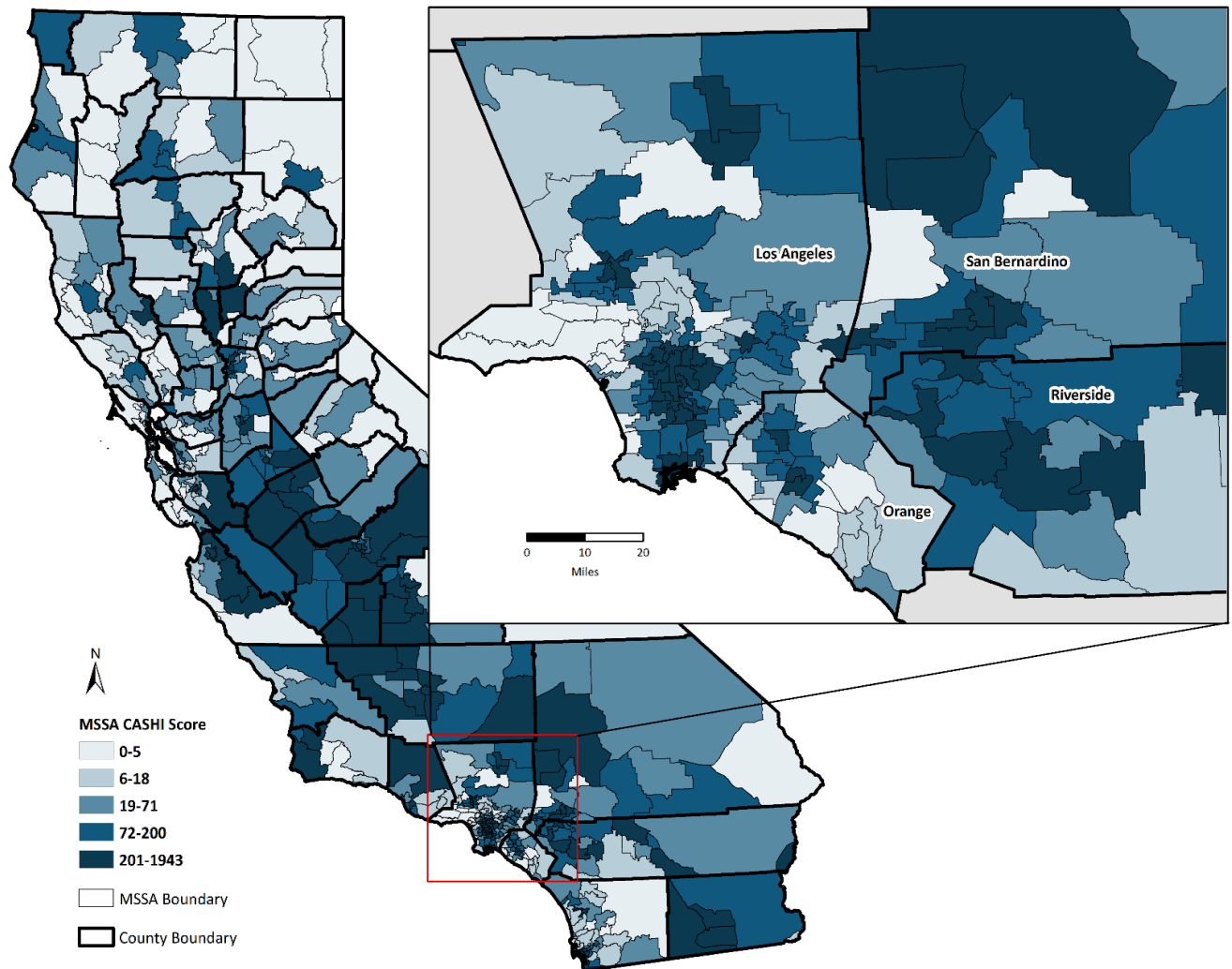


Figure 2. Map of 2018 California CASHNI Scores, by MSSA – San Joaquin Valley Detail



Note: The San Joaquin Valley region consists of the following counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare.

Figure 3. Map of 2018 California CASHNI Scores, by MSSA – Los Angeles County Area Detail



Note: Los Angeles County has 99 MSSAs, the highest number of MSSA among California counties

References and Technical Notes

- ¹ Selected examples of programs and initiatives are as follows: California Department of Public Health, Maternal, Child and Adolescent Health Division, Adolescent Health Programs <https://www.cdph.ca.gov/Adolescent-Health>; California Department of Health Care Services, Family PACT Program; California Department of Education, California Healthy Youth Act.
- ² Maternal, Child, and Adolescent Health Division. Adolescent births in California, 2000-2018. 2021. Accessed November 19, 2021 <https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/CDPH%20Document%20Library/Adolescents/Adolescent-Births-in-CA-2018.pdf>
- ³ World Health Organization. Defining sexual health: Report of a technical consultation on sexual health 28–31 January 2002, Geneva. 2006. Accessed November 19, 2021 https://www.who.int/reproductivehealth/publications/sexual_health/defining_sexual_health.pdf
- ⁴ Centers for Disease Control and Prevention. Social determinants and eliminating disparities in teen pregnancy. Published August 31, 2021. Accessed December 10, 2021. <https://www.cdc.gov/teenpregnancy/about/social-determinants-disparities-teen-pregnancy.htm>.
- ⁵ Centers for Disease Control and Prevention. Racism and health. Published November 24, 2021. Accessed December 10, 2021. <https://www.cdc.gov/healthequity/racism-disparities/index.html>
- ⁶ Bailey ZD, Feldman JM, Bassett MT. How structural racism works — racist policies as a root cause of U.S. racial health inequities. Malina D, ed. *New England Journal of Medicine*. 2021;384(8):768-773. doi:10.1056/nejmms2025396
- ⁷ University of Wisconsin Population Health Institute. Explore health rankings: County health rankings model. County Health Rankings & Roadmaps. Accessed December 10, 2021. <https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/county-health-rankings-model>
- ⁸ Khosrovian H. Agenda item 16: Medical Service Study Areas (MSSA) guidelines project. California Department of Health Care Access and Information. June 2020. Accessed November 10, 2021 <https://hcai.ca.gov/wp-content/uploads/2020/10/Agenda-Item-16-Medical-Services-Study-Area-MSSA-Guidelines-Project-ADA-Accessible.pdf>
- ⁹ Selection of indicators was limited to available data. Although CDPH/MCAH understands adolescent sexual health is larger than pregnancy prevention, there are currently no data on California adolescents reflective of the holistic sexual health model on an MSSA level (e.g., relationship information, pregnancy intentions among others).
- ¹⁰ Health Resources and Services Administration. Maternal and Child Health Bureau. Published September 12, 2020. Accessed December 10, 2021. https://mchb.tvisdata.hrsa.gov/uploadedfiles/StateSubmittedFiles/2021/CA/CA_TitleV_Print_Version_FY21.pdf

- ¹¹ The number of adolescent births in an MSSA was determined by geocoding birthing parents' addresses from the Birth Statistical Master File (California Department of Public Health, Center for Health Statistics and Informatics) using a 3-step process. 1) Raw address data were submitted to ESRI ArcGIS software for round one of geocoding; 2) Unmatched addresses from Step 1 were re-geocoded and cleaned; 3) Unmatched addresses in each of the California counties that comprise one MSSA (Alpine, Calaveras, Del Norte, San Benito and Sierra) were assigned to the county's corresponding MSSA. This process resulted in 97% of the 55,761 adolescent births in 2016-2018 being successfully geocoded.
- ¹² Maternal and Infant Health Assessment (MIHA) data snapshot, California by maternal age, 2013-2015. 2018. Approximately 6 in 10 adolescent births were mistimed or unwanted in California according to the MIHA survey; however, data by MSSA-level are not available. Accessed November 19, 2021
https://www.cdph.ca.gov/Programs/CFH/DMCAH/MIHA/CDPH%20Document%20Library/20132015/Snapshot_ByMaternalAge_2013-2015.pdf
- ¹³ The adolescent birth rate (ABR) is the number of live births to females aged 15-19 divided by the female population aged 15-19, multiplied by 1,000. The MSSA-level ABR was calculated as follows: 1) The number of live births among females aged 15-19 (numerator), by MSSA, was derived from the aggregated geocoded 2016-2018 birth data; 2) The population of females aged 15-19, by MSSA, (denominator) was calculated by aggregating available 2010 census-tract race/ethnicity data and calculating the corresponding proportional distribution by county, which was then applied to the aggregated California Department of Finance 2016-2018 county-level population data. Data sources: 2010 Census data, U.S. Census Bureau, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060, California Department of Finance, March 2020.
- ¹⁴ Centers for Disease Control and Prevention. Preventing pregnancies in younger teens. April 2014. Accessed November 10, 2021. <https://www.cdc.gov/vitalsigns/pdf/2014-04-vitalsigns.pdf>
- ¹⁵ This indicator was calculated by subtracting the date of the previous live birth from the conception date of the most recent live birth (both computed in months).
- ¹⁶ Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes. *JAMA*. 2006;295(15):1809. doi:10.1001/jama.295.15.1809
- ¹⁷ Chabot MJ, Sun S, Alexander I, Damesyn M. Trends in interpregnancy interval and preterm births in California: Comparison between adolescents and adults. Paper presented at American Public Health Association Conference; November 1, 2016; Denver, CO. <https://apha.confex.com/apha/144am/meetingapp.cgi/Paper/353274>
- ¹⁸ Cone JN, Hendrick CE, Owotomo O, Al-Hamoodah L, Maslowsky J. Socioeconomic well-being in early adulthood among repeat versus one-time teenage mothers. *Youth & Society*. 2019;53(7):1090-1110. doi:10.1177/0044118x19892455

- ¹⁹ The combined gonorrhea and chlamydia rate (GIR-CT) is the number of reported gonorrhea and chlamydia cases to youth aged 15 – 19 divided by the youth population aged 15-19, multiplied by 100,000. Incidence and population data were aggregated (2014-2016) to produce stable rates. Due to impacts of the COVID-19 pandemic, more recent local data (2016-2018) are not available. Counts of Gonorrhea and Chlamydia were geocoded and provided by the California Department of Public Health, STD Control Branch. Youth population size was calculated as follows: 1) The population of youth aged 15-19, by MSSA, was calculated by aggregating available 2010 census-tract level race/ethnicity data and calculating the corresponding proportional distribution by county, which was then applied to the aggregated California Department of Finance 2014-2016 county-level population data. Data sources: 2010 Census data, U.S. Census Bureau, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060, California Department of Finance, March 2020.
- ²⁰ California Department of Public Health, Sexually Transmitted Diseases (STD) Control Branch. STD Data. <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/STD-Data.aspx>. Accessed December 13, 2021.
- ²¹ Percentage of youth living in areas of concentrated poverty (PYP) is estimated using the percentage of people aged 10-24 living in a census tract where 20% or more of the total population is under the federal poverty threshold, defined by the Census Bureau as “areas of concentrated poverty.” Data from U.S. Census Bureau; 2018 American Community Survey 5-year estimates; using American FactFinder (American FactFinder has been decommissioned and is no longer available). Data are now available at <https://data.census.gov/cedsci/>
- ²² The methodology to calculate racial isolation (RIS) is adapted from The Furman Center for Real Estate and Urban Policy. The changing racial and ethnic makeup of New York City neighborhoods. 2011. The census tracts were defined as racially isolated if greater than 50% of the population was African American, Hispanic or American Indian/Native American and less than 20% of the population was White. The percentage of youth living in racially isolated areas of African Americans, Hispanics and American Indians/Native Americans is the number of people aged 10-24 living in racially isolated census tracts aggregated across MSSA geographic level. Data from U.S. Census Bureau; 2018 American Community Survey 5-year estimates using American FactFinder (American FactFinder has been decommissioned and is no longer available). Data are now available at <https://data.census.gov/cedsci/>
- ²³ White K, Borrell LN. Racial/ethnic residential segregation: Framing the context of health risk and health disparities. March 2011.
- ²⁴ Williams, D R, & Collins, C. Racial residential segregation: A fundamental cause of racial disparities in health. Public health Rep. 2001 Sep-Oct;116(5):404-16. doi: 10.1093/phr/116.5.404

- ²⁵ Percentage of individuals aged 18-24 in an MSSA that did not have a high school diploma or the equivalent (PWD) was revised in 2014 from the 2012 and 2013 CASHNI indicator high school dropout rate (HDO). The HDO included a countywide high school dropout rate. The MSSA-level indicator was more closely correlated with the other indicators included in the CAHSNI than the county-level data and thus was considered to be a more accurate reflection of need in the MSSA. Data from U.S. Census Bureau 2018 American Community Survey 5-year estimates using American FactFinder (American FactFinder has been decommissioned and is no longer available). Data are now available at <https://data.census.gov/cedsci/>
- ²⁶ High school graduation facts: Ending the dropout crisis. America's Promise. Accessed December 15, 2021. <https://www.americaspromise.org/high-school-graduation-facts-ending-dropout-crisis>
- ²⁷ California Health and Human Services. Medical Service Study Areas 2010. Accessed November 19, 2021. <https://data.chhs.ca.gov/dataset/medical-service-study-areas-20101>
- ²⁸ Beatty K, Heffernan M, Hale N, Meit M. Funding and service delivery in rural and Urban Local US Health Departments in 2010 and 2016. *American Journal of Public Health*. 2020;110(9):1293-1299. doi:10.2105/ajph.2020.305757
- ²⁹ Erwin PC, Braund WE. A public health lens on Rural Health. *American Journal of Public Health*. 2020;110(9):1275-1276. doi:10.2105/ajph.2020.305863
- ³⁰ Hardin HK, Alchami H, Lee D, Jones MS. Unmet health need and perceived barriers to health care among adolescents living in a rural area. *Children's Health Care*. 2020;50(1):108-123. doi:10.1080/02739615.2020.1833333
- ³¹ Z-scores are calculated for each indicator separately based on the mean and standard deviation across all 542 MSSAs. MSSAs with 0 births (n = 3) and/or 0 reported cases of gonorrhea (n = 108) were assigned a value of 0. The Z-scores greater than 3 were truncated to a value of 3 before summing the six indicators of community disparity.
- ³² Summed z-scores were sorted by MSSA and assigned a value based on their relative distribution. MSSAs in the bottom 0 – 39% of the distribution were ranked as lowest risk with a value of 1; MSSAs 40 – 59% = 2; MSSAs 60-79% = 3; MSSAs 80-89% = 4; and MSSAs >90% were ranked highest with a value of 5. Conceptualizing this is akin to saying that MSSAs exposed to the most harm require 5 times greater investment to achieve equity than those exposed to the least harm. Similarly, by multiplying harm by 3 for rural and frontier MSSAs, we are acknowledging that, irrespective of total harm, the cost of providing services in rural MSSAs is at least three times as much as the cost of delivering services in urban MSSAs.
- ³³ Childbearing among very young adolescents poses unique risks both to mother and child. To account for the greater needs of those younger relative to older adolescents, the NLB was weighted accordingly: multiplied by 3 for aged under 15; multiplied by 1.5 for aged 15-17; and multiplied by 0.5 for aged 18-19.
- ³⁴ CASHNI scores between 1 and 5 are noted with an asterisk to prevent constructive identification of births.