Appendix: Formulas and Calculations of Projected Loss of Funding and Services in Los Angeles County (LAC) at a 2%, 5%, and 10% Undercount of Latinos[i]

Levels of undercount scenarios used for this brief were 2%, 5%, and 10%. The best-case scenario of a 2% undercount was based on projections from independent researchers.[1] We project a higher undercount based on the estimate that 10.4% of the Los Angeles County population is undocumented, including 43% of immigrants from Latin America, compared to 3.8% of the total population nationally and 38.4% of Latin American immigrants overall in the U.S. being undocumented.[2] Undocumented residents have the highest risk of being undercounted in all published reports on the Latino undercount. Our 10% undercount was based on projections based on reluctance to respond due to the proposed addition of a citizenship question[3] which was not implemented. We assume that the response to recently implemented public charge regulations and other policies may give rise to similar levels of fears. One report projected that undocumented and mixed-status households could be at risk of an undercount levels as high as 10% on top of any baseline levels of undercount.[4] Other reports have used undercount levels as high as 12% for all Latino nationally[5] and 14%-25% for all Mexican immigrants nationally.[6] A 5% undercount was calculated to provide an intermediate estimate.

The total level of services and funding at the county level was found using online reports from the agencies' financial or annual reports or from statewide data. For reports on state-level services or funding delivered, the figure 26% (proportion of population of LAC relative to the state)[7] was multiplied by the total state-level service or federal funding. The loss of services due to undercount at the county level was calculated by multiplying total service delivered at the county level by the percent of the service reported to be used by Latinos, and the level of undercount (2%, 5%, or 10%).

The total funding lost for the county relative to service lost was determined by calculating the federal cost of each or service per unit, which was then multiplied by the total service lost at the county level for each level of undercount. Final projected loss of services and funds are reported in Exhibit 3 of the policy brief[8], and formulas and calculations are reported in Exhibit 4 in this Appendix.

A. In cases where service/funding is reported at the state level and used for:

- Total census-driven funding
- Funding for free and reduced-price meals
- Patient visits to federally qualified health centers (FQHCs)

Step 1: Calculate the per-unit cost of each service.

$0.26X_1/(A_1 \times 0.26)$ = Cost per unit per service in LAC

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[i] The 2020 census asks if people are Hispanic, Latino, or Spanish origin. While Latinx is increasingly used as a non-gendered form of Latino, we use "Latino" in this report to reflect the term most commonly used in the community in California.

      a. X_1 = funding for California in one year
      b. A_1 = Total number of residents or service allocated to LAC in one year

Step 2: Calculate the census-driven services lost for all LAC recipients at 2%, 5%, and 10% undercounts.

$0.26X_2$ x $0.02X_3$ = census-driven services lost at 2% undercount of Latinos
$0.26X_2$ x $0.05X_3$ = census-driven services lost at 5% undercount of Latinos
$0.26X_2$ x $0.10X_3$ = census-driven services lost at 10% undercount of Latinos

      c. X_2 = service used for California in one year
      d. 26% = percentage of population of LAC relative to CA
      e. X_3 = percentage of service or funds used by Latinos in LAC

Step 3: Calculate the total census-driven funding lost for all LAC recipients at a 2%, 5%, and 10% undercount of Latinos.

$0.26X_1$ x $0.02X_2$ x (X_1/A_1) = census-driven funding lost at a 2% undercount of Latinos
$0.26X_1$ x $0.05X_2$ x (X_1/A_1) = census-driven funding lost at a 5% undercount of Latinos
$0.26 X_1$ x $0.10X_2$ x (X_1/A_1) = census-driven funding lost at a 10% undercount of Latinos

B. In cases where service/funding is reported at the county level:

Used for:
- Supplemental Nutrition Assistance Program (SNAP) benefits
- Early Head Start home visitations for children under 3
- Home-delivered meals for seniors and disabled individuals
- Section 8 housing vouchers for low-income families and individuals
- Students receiving free and reduced-price meals

Step 1: Calculate the per unit cost of each service.

X_4/A_2 = Cost per unit per service in LAC

Step 2: Calculate the total census-driven services lost for all LAC recipients at a 2%, 5%, and 10% undercount of Latinos.

X_4 x $0.02X_2$ = census-driven services lost at a 2% undercount of Latinos
X_4 x $0.05X_2$ = census-driven services lost at a 5% undercount of Latinos
X_4 x $0.10X_2$ = census-driven services lost at a 10% undercount of Latinos

      a. X_4 = funding for the LAC in one year
      b. X_2 = % of service or funds used by Latinos in LAC
      c. A_2 = Total number of service allocated to LAC in one year

Step 3: Calculate the census-driven funding lost for funding for all LAC recipients at a 2%, 5%, and 10% undercounts:

X_4 x $0.02X_2$ x (X_4/A_2) = census-driven funding lost at a 2% undercount of Latinos
X_4 x $0.05X_2$ x (X_4/A_2) = census-driven funding lost at a 5% undercount of Latinos
X_4 x $0.10X_2$ x (X_4/A) = census-driven funding lost at a 10% undercount of Latinos

Exhibit 4. Calculations for Projected Loss of Funding and Services in LAC at a 2%, 5%, and 10% Undercount of Latinos

	Total funding/ services delivered	Total funding/service delivered to Latinos	Cost per unit in a year	Impact of undercount across Los Angeles County		
				% under-count	Total loss of services	Total loss of funding
Total census-driven funding[6,9]	Funding: $49 billion[a] x (0.26[b]) = $12.7 billion	(10.12 million LAC residents) x (0.46[c]) x ($1,259/resident) = $5.9 billion	Cost per resident [($49 billion[a]) x (0.26[b])]/ (10.12 million LAC residents) = $1,259/resident	2%	(10.12 million residents) x (0.46) x (0.02) = 93,104 residents	(10.12 million residents) x (0.46) x ($1,259/resident) x (0.02) = $117.2 million
				5%	(10.12 million residents) x (0.46) x (0.05) = 232,760 residents	(10.12 million residents) x (0.46) x ($1,259/resident) x (0.05) = $293 million
				10%	(10.12 million residents) x (0.46) x (0.10) = 465,520 residents	(10.12 million residents) x (0.46) x ($1,259/resident) x (0.10) =$586.1 million
SNAP benefits for low- income households[10,11]	Funding: $1.933 billion		Cost per household ($1.933 billion)/ (296,000 households) = $6,530/household	2%	(296,000 households) x (0.53) x (0.02) = 3,137 households	(296,000 households) x (0.53) x (0.02) x ($6,530/household) = $20.5 million
				5%	(296,000 households) x (0.53) x (0.05) = 7,844 households	(296,000 households) x (0.53) x (0.05) x ($6,530/household) = $51.2 million
	Households: 296,000 households	(296,000 households) x (0.53[d]) = 156,880 households		10%	(296,000 households) x (0.53) x (0.10) = 15,688 households	(296,000 households) x (0.53) x (0.10) x ($6,530/household) = $102.4 million
Early Head Start home visitations for children < 3 years[12,13]	Families: 3,452 families	(3,452 families) x (0.75[e]) = 2,589 families	Cost per family ($30 million)/ (3,452 families) = $8,690/family	2%	(3,452 families) x (0.75) x (0.02) = 52 families	(3,452 families) x (0.75) x (0.02) x ($8,690/family) = $450,000
				5%	(3,452 families) x (0.75) x (0.05) = 129 families	(3,452 families) x (0.75) x (0.05) x (8,690/family) = $1.1 million
				10%	(3,452 families) x (0.75) x (0.10) = 259 families	(3,452 families) x (0.75) x (0.10) x (8,690/family) = $2.2 million

					Home-delivered meals	
Home-delivered meals for seniors (65+) and disabled adults[14,15,16]	Meals delivered: 1 million	(1 million meals) x (0.30[f]) = 300,000 meals	$7.85/meal	2%	(1 million) x (0.30) x (0.02) = 6,000 meals	(1 million) x (0.30) x (0.02) x ($7.85/meal) = $47,100
				5%	(1 million) x (0.30) x (0.05) = 15,000 meals	(1 million) x (0.30) x (0.05) x ($7.85/meal) = $117,800
				10%	(1 million) x (0.30) x (0.10) = 30,000 meals	(1 million) x (0.30) x (0.10) x ($7.85/meal) = $235,500
					Unique clients	
	Unique clients: 26,000	(26,000 unique clients) x (0.30[f]) = 7,800 unique clients		2%	(26,000) x (0.30) x (0.02) = 156 clients	
				5%	(26,000 x (0.30) x (0.05) = 390 clients	
				10%	(26,000) x (0.30) x (0.10) = 780 clients	
Section 8 housing vouchers for low-income households[17]	Funding: (622 million) x (0.94)= $585 million[g] Households receiving housing vouchers: 58,179 households	(58,179 households)(0.25[h]) = 14,545 Latino households (58,179 households) x (0.25[h]) x ($1,060/household per year) = 146.3 million	Cost per household ($585 million[g])/(58,179 households) = $10,060/household per year	2%	(58,179 households) x (0.25) x (0.02) = 291 households	(58,179 households) x (0.25) x (0.02) x ($10,060/household per year = $2.9 million
				5%	(58,179 households) x (0.25) x (0.05) = 727 households	(58,179 households) x (0.25) x (0.05) x ($10,060/household per year) = $7.3 million
				10%	(58,179 households) x (0.25) x (0.10) = 1,454 households	(58,179 households) x (0.25) x (0.10) x ($10,060/household per year) = $14.6 million
Free or reduced-price meals for students[18,19,20]	Funding: ($2.6 billion[i]) x (0.26[b]) = 676 million Students receiving free or reduced-price meals: 1,034,525 students	Funding: (676 million) x (0.53) = 358.3 million (1,034,525) x (0.53) = 525,000 students [(969,000[j]) x (0.57[k])]/ (1,034,525 students) = 53%	($676 million)/ (1,034,525 students) = $653/student	2%	(1,034,525) x (0.53) x (0.02) = 10,966 students	(1,034,525) x (0.53) x (0.02) x ($653/student) = $7.2 million
				5%	(1,034,525) x (0.53) x (0.05) = 27,415 students	(1,034,525) x (0.53) x (0.05) ($653/student) = $17.9 million
				10%	(1,034,525) x (0.53) x (0.10) = 54,830 students	(1,034,525) x (0.53) x (0.10) x ($653/student) = $35.8 million

HRSA health center patients[21]	Patients: (4.98 million[l]) x (0.26[b]) = 1,294,800 million patients	(4.98 million[l]) x (0.26[b]) x (0.61[m]) = 789,828 patients	Cost per patient visit: ($640 million)/ (4.98 million patients) = $129/patient	2%	(4.98 million patients) x (0.26) x (0.61) x (0.02) = 15,797 patients	(4.98 million patients) x (0.26) x (0.61) x (0.02) x ($129/patient) = 1.9 million
				5%	(4.98 million patients) x (0.26) x (0.61) x (0.05) = 39,491 patients	(4.98 million patients) x (0.26) x (0.61) x (0.05) x ($129/patient) = $5.1 million
				10%	(4.98 million patients) x (0.26) x (0.61) x (0.1) = 78,983 patients	(4.98 million patients) x (0.26) x (0.61) x (0.10) x ($129/patient) = $10.2 million

Notes:

a. Reported for California statewide
b. 26% of the population in California lives in LAC.
c. Latinos make up about 46% of the LAC population.
d. 53% of SNAP recipients are Latino.
e. 75% of families receiving home visitations through EHS are Latino.
f. Based on review of reports of home-delivered meals in the state and county, we use the estimate that 30% of home-delivered meal recipients are Latino.
g. Of the $622,298,626 in funding for Section 8 housing vouchers, 94% is from grants received through HUD.
h. About one-quarter of households receiving Section 8 housing vouchers are Latino.
i. Reported for California statewide
j. Latino students enrolled in LAC schools
k. Percentage of Latino students enrolled in free or reduced-price meals schools
l. Reported for California statewide
m. Patients using California community health centers who are Latino

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Read the full study at https://healthpolicy.ucla.edu/publications/Documents/PDF/2020/census-undercount-policybrief-mar2020.pdf

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