

efforts for black children. Ongoing surveillance efforts must reflect the dynamic association between race and age-related risk for youth suicide.

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Association of Maternal Eligibility for the Deferred Action for Childhood Arrivals Program With Citizen Children's Participation in the Women, Infants, and Children Program

Nearly 7% of children living in the United States, the vast majority of whom are US citizens, have at least 1 undocumented immigrant parent.¹ These children face several disadvantages, culminating in reduced lifetime socioeconomic mobility and reduced well-being.¹ One mechanism underlying these adverse consequences could be failure to receive critical public benefits despite meeting eligibility criteria because undocumented parents may be less likely to apply for these services on their child's behalf if they fear being discovered by immigration authorities.^{2,3}

Policies that bring undocumented parents "out of the shadows," such as the 2012 Deferred Action for Childhood Arrivals (DACA) program, may have positive spillover effects for their children by improving uptake of public benefits. We examined the association of parental DACA eligibility with children's participation in the Women, Infants, and Children (WIC) program, a benefit that has been shown to improve child health and socioeconomic outcomes.⁴

Methods | We used data from the 2010-2015 National Health Interview Surveys (NHIS). Our sample consisted of US citizen children who were 5 years of age or younger (reflecting WIC age eligibility criteria) and whose mothers were Hispanic and not US citizens. The latter criterion follows earlier work that noted that a large percentage (>60%) of self-reported noncitizens are undocumented.⁵ In addition, we further restricted the sample to children whose mothers had lived in the United States for at least 5 years. We also restricted our sample to children of mothers who were 19 years of age or older and had received at least a high school diploma or General Educational Development certificate, to hold fixed 2 key DACA eligibility criteria.⁵ This study was acknowledged as exempt, non-human subjects research by the Johns Hopkins School of Medicine Institutional Review Board.

Our main outcome was whether the child was enrolled in WIC in the previous calendar year (the period queried by the NHIS). Our main exposure—whether the mother met DACA eligibility criteria—was defined on the basis of the mother's age at immigration (≤ 16 years) and age at DACA implementation (≤ 31 years at policy implementation).⁵

We estimated a difference-in-difference model that compared changes in WIC enrollment among children whose mothers met the 2 DACA age eligibility criteria before (survey years, 2010-2012) vs after (survey years, 2014-2015) policy introduction with changes among children whose mothers did not meet these criteria. (Survey year 2013 was excluded because it corresponded to WIC participation in the year DACA was implemented). We adjusted for sociodemographic characteristics of both the child and mother.⁶ All descriptive statistics and analyses were performed using NHIS sample weights.

Results | Our final sample consisted of 1911 children 5 years or younger, of whom 33.8% had a mother who likely met DACA eligibility criteria (**Table 1**). Overall, 43.1% children participated in the WIC program during the study period.

Table 1. Selected Descriptive Statistics of Citizen Children and Noncitizen Hispanic Mothers by Likely DACA Eligibility^a

Variable	Likely DACA-Ineligible Mothers and Children ^b	Likely DACA-Eligible Mothers and Children ^c
Sample, No. (%)	66.2	33.8
Child		
Age, mean (SD), y	2.65 (1.96)	2.37 (1.95)
Sex, %		
Male	52.5	51.9
Female	47.5	48.1
Mother		
Age, mean (SD), y	34.0 (5.90)	25.7 (4.08)
Educational level, %		
High school ^d	59.4	70.1
Some college	40.6	29.9
Comfortable with English language, % ^e	46.3	59.8
Married, %	76.9	61.9
No. of years in US, %		
5-9	41.3	11.1
10-14	33.5	27.9
≥15	25.2	61

Abbreviation: DACA, Deferred Action for Childhood Arrivals.

^a All descriptive statistics are weighted by National Health Interview Surveys sample weights. The primary analytic sample consists of children age 5 years and younger who are US citizens and who have noncitizen Hispanic mothers with a high school diploma or GED certificate who have lived in the United States for at least 5 years. Mothers likely eligible for DACA are defined as those who, as of June 2012, were 31 years or younger and had lived in the United States for at least 5 years.

^b Constitutes 1258 unweighted or 2 777 930 weighted individuals.

^c Constitutes 653 unweighted or 1 418 199 weighted individuals.

^d Includes receipt of general educational development (GED) certificate.

^e Considered "comfortable" if the interview was administered in English only.

A mother's DACA eligibility was associated with a 12.3% (95% CI, 0.7%-23.9%) higher likelihood that her child participated in WIC (Table 2). Among children whose families met broad WIC income eligibility criteria (family income <185% of the federal poverty level or Medicaid receipt), we found similar estimates (β coefficient, 13.5%; 95% CI, 0.81%-26.3%). We did not find an association among children with noncitizen mothers who likely would not have met DACA eligibility criteria on the basis of educational attainment (falsification test).⁵

Discussion | Maternal eligibility for the DACA program was associated with increased participation in WIC by their citizen children. These results highlight the potential for multigenerational spillover effects of immigration policy.

A limitation of our analysis is that we were unable to explicitly identify undocumented parents or make strict determinations of DACA eligibility. However, these limitations are true of all nationally representative data sets and likely will result in underestimates of program effects.⁵ A second limitation is that data were self-reported. Third, even with the quasi-experimental research design, it is possible that the findings were biased by unmeasured confounders.

Our findings—along with growing evidence of the direct health consequences of DACA for both beneficiaries and their

Table 2. Association of Maternal DACA Eligibility With Children's Participation in WIC^a

Variable	Children Aged ≤5 y (n = 1911)	Children Aged ≤5 y Likely Meeting WIC Income Eligibility Criteria (n = 1572) ^b	Falsification Test (n = 2986) ^c
Difference-in-difference estimate, % (95% CI)	12.3 (0.7 to 23.9)	13.5 (0.81 to 26.3)	3.7 (-7.2 to 14.6)
P value	.04	.04	.50

Abbreviations: DACA, Deferred Action for Childhood Arrivals; WIC, Women, Infants, and Children program.

^a Linear probability (ordinary least squares) difference-in-difference estimates. Models were weighted to reflect National Health Interview Surveys sampling weights. Confidence intervals were corrected for clustering at the household level. All models were adjusted for child and mother characteristics in Table 1. Because WIC participation was defined in the previous calendar year and DACA was implemented in June 2012, we chose to exclude 2013 data and define the prepolicy period as 2010 to 2012 and the postpolicy period as 2014 to 2015.

^b WIC eligibility was defined as family income <185% of the federal poverty level or child receiving Medicaid benefits.

^c Children with mothers without a high school diploma or General Educational Development certificate.

children^{5,7}—should be considered in ongoing debates around immigration policy.

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COMMENT & RESPONSE

Cost-effectiveness of Nusinersen for Spinal Muscular Atrophy

To the Editor Prasad's editorial is disappointing, suggesting that nusinersen was given too broad a label and its efficacy is "marginal."¹ He infers insurance companies should decline coverage for milder types of spinal muscular atrophy (SMA). Delegating medical decision making to a company seems ethically unsound.

Prasad states "the randomized data submitted to the FDA [US Food and Drug Administration] supporting the benefit of nusinersen is, to date, for only one particular subgroup of the disease (SMA subtype 1). The broader FDA data approval was made for all subtypes based on uncontrolled data."¹ This is not true. There were 3 clinical trials (CS3B, CS4, and SM202) and multiple uncontrolled trials reviewed. Statistical analysis could only be performed for CS3B, but topline data were reviewed for CS4 (later-onset SMA). This is well-documented in multiple aspects of the FDA review, including the unreferenced clinical efficacy review.²

CS3B is a study of infantile-onset SMA, not SMA type 1. Inclusion criteria were biased toward SMA type 1, but SMA exists on a spectrum with typing based on maximum motor milestones. Spinal muscular atrophy is not like cancer, where myriad factors are thought to play a major role in modifying disease pathogenesis. Ninety-five percent of all patients, regardless of type, carry the same *SMN1* deletions. The predominant difference between SMA types is *SMN2* copy numbers. Those with fewer *SMN2* copies have more severe disease. Nusinersen acts on *SMN2* transcripts. Common sense predicts an equal or greater drug effect will be seen in SMA types 2 through 4. Prasad recommends "caution in extrapolating benefits shown in severe disease settings to more indolent settings."¹ I generally agree, but when subspecialists and the FDA³ provide rational arguments to the contrary, perhaps he should listen.

The information from the clinical trials will only address SMA types 1 and 2, accounting for 87% of SMA.⁴ Results are also pending for a presymptomatic trial that mimics newborn screening, a logical follow-up study. The sponsor should not be belabored for not crafting appropriate trials. The only areas that I, as a spe-

cialist in the field, bemoan are the cost of the drug and time it takes to publish clinical trial data in peer-reviewed journals. This is the best way to allow readers to come to their own opinion about the efficacy of nusinersen.

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In Reply Richardson makes 4 errors. First, I note insurers might choose to decline coverage of nusinersen where it does not have randomized data supporting its use.¹ An insurer using controlled data to make coverage decisions for a drug that costs \$750 000 in the first year and offers a marginal benefit has become a tragic reality of 2018. Because manufacturers price medications unconscionably, patients, payers, and society are put in the impossible position of choosing between costly, marginal drugs or the health needs of many children.

Second, data from CS4, the CHERISH study, are now published, but at the time of US Food and Drug Administration (FDA) approval it was specifically noted in the medical review as "not submitted as part of this NDA [new drug application] and therefore could not be reviewed."² SM202 was ongoing at the time of FDA approval.² The FDA makes this clear: "the sham-procedure controlled study CS3B is the one adequate and well-controlled efficacy study that can support approval of nusinersen."² Uncontrolled data offer limited value for judging the efficacy of this drug. If uncontrolled data were informative, sham control trials would not have been performed.

The CHERISH study now confirms the effect size of ENDEAR. Nusinersen improves the Hammersmith Functional Motor Scale-Expanded 3.9 points from baseline and 4.9 points vs sham control (final analysis).³ Given that the mean Hammersmith Functional Motor Scale-Expanded score on entry was 22.4 in the Nusinersen group and 19.9 in the sham group (the scale ranges from 0 to 66), although this is a positive trial, nusinersen does not represent a cure, offers a marginal effect size, and leaves room for more effective agents.