

Policies of Exclusion: Implications for the Health of Immigrants and Their Children

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Abstract

Public policies play a crucial role in shaping how immigrants adapt to life in the United States. Federal, state, and local laws and administrative practices impact immigrants' access to education, health insurance and medical care, cash assistance, food assistance, and other vital services. Additionally, immigration enforcement activities have substantial effects on immigrants' health and participation in public programs, as well as effects on immigrants' families. This review summarizes the growing literature on the consequences of public policies for immigrants' health. Some policies are inclusive and promote immigrants' adaptation to the United States, whereas other policies are exclusionary and restrict immigrants' access to public programs as well as educational and economic opportunities. We explore the strategies that researchers have employed to tease out these effects, the methodological challenges of undertaking such studies, their varying impacts on immigrant health, and steps that can be undertaken to improve the health of immigrants and their families.

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INTRODUCTION

Between 1990 and 2015, the number of immigrants to the United States rose from 19.8 million to 43.2 million (71, 104a). Comprising 13.5% (43.7 million) of the US population in 2016, these immigrants have moved to the United States from Latin America or the Caribbean (51%), Asia (31%), Africa (5%), Europe (11%), and other world regions (2%) (78). They include voluntary migrants seeking to reunify with their families and improve their economic circumstances. They also include involuntary migrants or refugees fleeing persecution, violence, and war in their home countries.

Upon their arrival in the United States, immigrants face the difficult challenge of adapting to life in a new country with a different culture, social norms, and social institutions. These social institutions include an array of federal, state, and municipal laws and administrative practices (i.e., policies) that can either facilitate or hinder the adaptation of immigrants to the United States (22, 83). Guided by a structural framework for understanding social determinants of health (31, 139), this review examines the burgeoning literature on the policies that influence the health of immigrants to the United States. We begin with an overview of the pathways through which policies can influence health. We then discuss empirical research strategies for identifying the effects of policies on health. Next, we review evidence from four veins of research on the effects of (a) welfare and health reform, (b) immigration enforcement activities and raids, (c) state and local immigrant policies, and (d) immigration policies conferring or denying legal-residency status to immigrant populations residing in the United States. We conclude with a discussion of the gaps in research and the steps that can be taken to better promote the health of immigrants and, consequently, their economic and social integration into the United States.

PATHWAYS OF INFLUENCE

Though the United States has no formal immigrant integration policies, a patchwork of federal, state, and municipal laws and administrative practices affect immigrants' access to education, employment, and health and human services (22, 82). Because nearly one-quarter of children in the United States live with at least one immigrant parent, this patchwork affects the health and well-being of not only adult immigrants but also an estimated 15.8 million US-born children of immigrants (77). Many of these children live in what are known as mixed-status families containing both US citizens or lawfully present immigrants and undocumented/unauthorized immigrants (29).

Immigrant integration policies influence health outcomes for immigrants and their children both directly and indirectly (92, 100). Policies directly influencing the health of immigrants include those that explicitly enhance or curtail access to public and private health insurance and the provision of health care services through federally qualified community health centers (FQHCs) or local departments of public health. Policies indirectly influencing the health of immigrants include a broader assortment of social policies that influence the availability of socioeconomic resources essential to the production of health (e.g., educational attainment, employment, income, housing, and food). Policies (e.g., English-only laws) can also indirectly influence the health of immigrants and their children by influencing (or reflecting) how they are perceived by others as well as their own perceptions of belonging in a community (57, 138, 139).

Some of these policies are inclusive and potentially protective. They aim to blur the boundaries between foreign-born and US-born Americans, recognizing foreign-born residents of the United States as "Americans in waiting" with the potential to become productive and loyal US citizens (3, 82). Some of these policies are exclusionary and restrictive. They aim to brighten boundaries between foreign-born and US-born Americans, curtailing foreign-born individuals' access to public

services, education, and employment (3, 22). These policies of exclusion can legitimate discrimination, institutionalize racism, and foster fear and mistrust.

Attention to the effects of broader social policies on the health of immigrants largely began with the onset of welfare reform in 1996. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) created two categories of immigrants—qualified and nonqualified—and limited access to federally funded health insurance, food assistance, and cash assistance, depending on immigrants' qualified status, year of arrival to the United States (before/after August 22, 1996), and years of legal permanent residency (LPR) in the United States (5 years or less versus more than 5 years) (40). Qualified immigrants include legal permanent residents (LPRs), refugees and asylees, and certain other categories of immigrants who are qualified for public assistance on humanitarian grounds. Nonqualified immigrants include undocumented/unauthorized immigrants, persons with temporary protected status (TPS), and other lawfully present immigrants such as those with temporary student and work visas (40). PRWORA and related legislation also made it more difficult for low-income, lawfully present immigrants to qualify for all federally funded public assistance benefits by deeming their sponsors' income as their own income until they naturalize or complete 40 quarters of qualifying employment (50). States, however, had the flexibility to restore select benefits by taking up optional federal coverage for some immigrant populations and providing state-funded substitutes (20, 40).

When Congress enacted the Affordable Care Act (ACA) in 2010, these dimensions of eligibility for access to federally funded health insurance were maintained but they were not applied to subsidized or unsubsidized insurance purchased through the Health Insurance Marketplace (67). All lawfully present noncitizens (including those with TPS, student visas, or temporary work visas) are eligible to purchase health insurance through the Marketplace regardless of their years of residency in the United States. However, undocumented/unauthorized immigrant adults and children are prohibited from purchasing insurance through the Marketplace.

During the 2000s, attention to the effects of immigrant integration policies on health shifted to include the effects of local immigrant enforcement efforts and workplace raids (27, 30, 33). Adopted in 1996, Section 287(g) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) granted state and local law enforcement jurisdictions the option to participate in enforcing federal immigration laws. Yet law enforcement jurisdictions did not begin to participate in immigration enforcement until 2002–2003. Participation grew slowly, but by 2009, 76 state and local jurisdictions (covering at least one-fifth of all US counties) had 287(g) agreements with US Immigration and Customs Enforcement (ICE) (140). The launch of the Secure Communities (SComm) program in 2008 further amplified the role of law enforcement in immigration enforcement by requiring that local police match the fingerprints of all arrested individuals with an ICE database to screen for immigration violations. The increase in local immigration enforcement throughout the 2000s was accompanied by an increase in the detainment and deportation of immigrants and increased attention to their effects on both the health of detainees and deportees as well as the health of family members left behind (30).

At the same time, state and local governments began to adopt both restrictive and inclusive immigrant integration policies. While states and local governments cannot regulate who can reside within their boundaries, they can enact laws or resolutions and administrative regulations designed to affect access to state or local education, employment, health, and human services. Notable examples of such legislation include California's Proposition 187, passed in 1994, and Arizona's SB 1070, passed in 2010 (115, 119, 144). Though full implementation of these two particular laws was ultimately blocked by the US Supreme Court, other state-level laws have been implemented. Between 2007 and 2017, states enacted ~200–500 immigration-related laws/resolutions each year (16, 81). The most well-studied of these laws include laws allowing or explicitly denying

undocumented/unauthorized immigrant students access to in-state residency tuition (IRT) benefits for postsecondary education in community colleges and public universities, laws allowing or denying access to state IDs and driver's licenses, and E-Verify laws requiring employers to verify the work authorization of new hires. The adoption of more restrictive state immigrant policies has been associated with anti-immigrant anxieties that reflect both economic insecurity and growing proportions of immigrants who are racialized (i.e., perceived as nonwhite) in a state (56, 146). Thus, any associations between these policies and immigrant health may reflect not only their associations with reductions in socioeconomic resources but also their associations with anti-immigrant sentiment and hostility.

Finally, between 1990 and 2007, the number of undocumented/unauthorized immigrants increased from 3.5 million to 12 million before stabilizing at 11 million for the past 10 years (94). As a result, research throughout this period has attempted to understand the health consequences of immigration laws conferring or denying legal residency to immigrant populations residing in the United States. This research encompasses studies on differences in the health of immigrants as evaluated by their immigration status (e.g., US-born citizen, naturalized citizens, lawfully present noncitizen, or undocumented/unauthorized immigrant) and the health of US citizen children as evaluated by their parents' immigration status. It also includes recent research on the health of immigrants with more liminal legal residency such as those who received the Deferred Action for Childhood Arrival (DACA) status or migrated to the United States as unaccompanied child migrants (UCM) seeking political asylum (13, 76).

IDENTIFICATION AND MEASUREMENT STRATEGIES

In studying the consequences of immigrant integration policies, researchers have taken two complementary approaches. The first approach has focused on understanding the effects of these policies on immigrants through state and local case studies, utilizing qualitative interviews and/or focus groups with immigrants and their families as well as service providers in community-based organizations (CBOs) and public agencies (e.g., 35, 47, 48, 98). These in-depth qualitative approaches allow researchers to understand how policies and practices shape the daily-life experience of immigrants, their families, and those who provide services to them.

The second approach utilizes quantitative data to identify statistical associations between policies, immigration or citizenship status, and outcomes. One set of quantitative studies attempts to identify the causal effects of policies. These studies often utilize variation in the timing and implementation of policies across states/counties, together with variation in the populations affected by policy changes within states/counties (e.g., 64, 86, 102, 140, 146). The difference in the effects of policies before and after implementation are compared for the populations affected by the policy change (e.g., noncitizens) versus those not affected (or less affected) by the policy change (e.g., US citizens). These difference-in-difference methods help to ensure that the effects identified are attributable to the policy change and not to other changes (e.g., a recession or economic boom) that occurred contemporaneously.

Within these studies, the implementation of policies has been measured in several unique ways. For example, Kaushal & Kaestner (65) used variation in welfare caseloads over time and across states to identify the effects of welfare reform on health insurance, health care utilization, and health among low-income immigrant women and their children. Watson and others used deportation data from the US Department of Homeland Security (DHS) over time and by US regions to identify the effects of immigration enforcement efforts on the Medicaid and Women, Infants, and Children (WIC) participation of children of noncitizens (131, 141). Potochnick et al. and others utilized data on whether individuals live in an area with a 287(g) agreement to

identify the effects of these agreements on food insecurity and health (102, 140). Additionally, researchers have created scales based on the frequency and/or severity of state-level, inclusive, or restrictive immigrant policies to identify the effects of these policies on economic and health outcomes among immigrants (55, 148). Because states may administer a mixture of policies that are both inclusive and restrictive, it is essential that these coding schemes allow for the full range of policies.

A second set of quantitative studies focuses on identifying immigration status and evaluating differences in outcomes by adults' and children's immigration status or the status of their parents. The methodological challenge for these studies is the identification of individuals with undocumented/unauthorized immigration status (15, 28, 88, 123, 126). Given legitimate concerns about the disclosure of undocumented/unauthorized immigration status, few state or national surveys directly ask about US immigration status. In those surveys that do (e.g., the Survey of Income and Program Participation or the California Health Interview Survey), the typical approach is to ask about some combination of place of birth, US citizenship, LPR (or "green card") status, and other visa status (e.g., refugee/asylees, TPS, student visa). Those who report that they are foreign-born noncitizens with no green card or visa are assumed to be undocumented/unauthorized immigrants or imputed to be undocumented/unauthorized immigrants (104). Among foreign-born participants, rates of missing responses on this series of questions are surprisingly low (2–5%) (15). In surveys lacking data on immigration status (e.g., the Current Population Survey), researchers have developed imputation strategies that involve assigning undocumented/unauthorized status on the basis of probabilities estimated from information on country of origin, years in the United States, state of residence, occupation, educational attainment, age, and sex (93, 126). The most highly regarded of these methods utilizes multiple imputation to adjust for uncertainty in the measurement of undocumented/unauthorized status (126). However, even when investigators convincingly assign undocumented/unauthorized immigration status to survey participants, they must still contend with the reality that undocumented/unauthorized immigration status is not assigned randomly to individuals. Thus, without the use of more sophisticated analytical methods (e.g., propensity score matching), it is difficult to say with certainty that differences in an outcome by undocumented/unauthorized immigration status result from their status, *per se*, rather than from differences in both observable and unobservable characteristics of those who are undocumented/unauthorized immigrants and those who are not.

A third set of quantitative studies focuses on the degree of worry, stress, or fear associated with local immigration enforcement efforts, state-level restrictive immigrant policies, undocumented/unauthorized status, and public sentiment toward immigrants (14, 80, 132). For example, the annual Pew National Survey of Latinos asks, "Regardless of your own immigration or citizenship status, how much, if at all, do you worry that you, a family member, or a close friend could be deported?" (109). Arbona et al. (11) developed a seven-item scale to assess whether individuals avoided or did not engage with common activities (e.g., applying for a driver's license, seeking help from public agencies, and reporting crime to the police) because of "fear or concerns of being deported." To measure state-level public sentiments about immigrants, Morey et al. (80) and Van Hook et al. (127) utilized five items from the General Social Survey (GSS) regarding attitudes toward increasing immigration, attitudes toward undocumented/unauthorized immigration, and beliefs about immigrants' effects on job opportunities, crime, and the economy. The stress and fear associated with undocumented/unauthorized status and the risk of deportation are prevalent not only among those without legal-residency status but also among their friends and family who experience what has been termed "vicarious illegality" as well as among all persons whose legal presence in the United States is questioned because of their race/ethnicity (12, 44, 133). Thus, studies utilizing these methods help to identify the broader, spillover effects of restrictive policies

and anti-immigrant sentiments on groups and individuals who are not specifically targeted by such policies.

WELFARE REFORM AND HEALTH REFORM

Immigrants have historically participated in public assistance programs at lower rates than have US-born natives (17, 20). These public assistance or safety-net programs include cash assistance [i.e., Temporary Assistance for Needy Families (TANF) and Supplemental Security Income (SSI)], food assistance [i.e., the Supplemental Nutrition Assistance Program (SNAP)], and medical assistance [i.e., Medicaid and the Children's Health Insurance Program (CHIP)].

As intended by the US Congress, both immigrants' and US-born natives' use of most public assistance benefits—TANF, SSI, SNAP, and Medicaid/CHIP—declined after welfare reform (20, 39, 52). However, in the first 2–4 years after welfare reform, public assistance participation rates declined relatively more for immigrants than for US-born natives (24, 25, 64, 70, 125). Some of these declines were explained by improvements in the economy that helped to reduce the need for public assistance benefits (21, 52, 70). However, other declines were attributable to “chilling effects”: Immigrants who were eligible for public assistance benefits failed to take up benefits for themselves or their children because they were confused about their eligibility, intimidated by the application process, or feared being labeled a public charge (i.e., an individual who is likely to become reliant on public assistance and deemed ineligible to become an LPR or citizen of the United States) (39, 98). The evidence is mixed, suggesting few chilling effects for immigrants participating in TANF or SSI but stronger chilling effects for immigrants participating in SNAP and Medicaid/CHIP (50, 52, 64, 66, 125).

Responses of immigrants and states weakened the effects of welfare reform on immigrants' public assistance participation rates. Immigrants responded to welfare reform by naturalizing at significantly higher rates after reform (24, 125, 128). States responded with extensive outreach efforts to encourage and facilitate the enrollment of eligible immigrants into programs, especially Medicaid/CHIP and SNAP, after the initial declines in their enrollment became apparent (1, 2, 50, 66). In addition, some states responded to welfare reform by opting to continue coverage of qualified immigrants and even expanding coverage to some nonqualified immigrants using state-only funds (40).

Nevertheless, research evidence indicates that these declines in public assistance coverage had negative consequences for poverty and food security in households headed by immigrants. Though immigrants' employment rates increased, immigrants tended to find employment in low-wage jobs without health insurance (60, 64). After welfare reform, increases in unemployment during the 2008–2009 Great Recession led to greater increases in poverty among children in immigrant-headed households than among children in households headed by US-born natives (20). Declines in SNAP receipt and benefit allotments made to children of noncitizens resulted in higher levels of food insecurity among these children (127).

Moreover, declines in public assistance coverage led to reductions in health insurance coverage and health utilization among the most vulnerable populations of immigrants: women and children. The proportion of uninsured among low-educated, foreign-born unmarried women increased, resulting in delays in obtaining medical care and declines in annual physicians' visits for this population (64, 65). Most research [see Joyce et al. (58) and Loue et al. (74) for exceptions] suggests that the consequences of welfare reform were particularly severe for pregnant Hispanic/Latina women living in states that fully implemented immigrant eligibility restrictions in their Medicaid/CHIP programs rather than preserving or expanding Medicaid/CHIP coverage. In these states, noncitizen Hispanic/Latina women had significantly lower prenatal and perinatal health care use

(37, 42). Some evidence also suggests that reforms reduced health insurance coverage among children of immigrants and led to poorer infant health among those who lost TANF or Medicaid/CHIP coverage (62, 64).

The 2010 Affordable Care Act had the potential to restore and improve coverage for many lawfully present immigrants (67). All US residents (including immigrants) benefited from provisions in the ACA to (a) expand dependent coverage up to age 26, (b) eliminate pre-existing condition clauses from private coverage, (c) provide states with the option (and enhanced federal funding) to expand Medicaid eligibility, (d) provide premium and cost-sharing subsidies to lower-income populations, (e) expand funding for community health centers, and (f) require the provision of culturally/linguistically appropriate materials by insurers and increase funding for translation services for Medicaid/CHIP. However, despite these reforms, health insurance coverage for undocumented/unauthorized immigrants was still limited to Emergency Medicaid; they were ineligible for the Medicaid expansion and prohibited from buying coverage through the ACA's insurance Marketplaces even if they used their own funds.

Because most of the ACA's coverage provisions were not implemented until 2014, little data on the ACA's effects on immigrants' insurance status and health are currently available. For many US residents, preliminary evidence shows higher health insurance rates, especially among states adopting the Medicaid expansion option; increases in utilization of outpatient and preventive care; reductions in emergency department use; and improved self-reported health after the ACA's implementation (41, 59, 114). As of 2016, undocumented/unauthorized immigrants left out of health reform and lawfully present immigrants had the highest uninsured rates among the nonelderly (39% and 17%, respectively) compared to 9% of US citizens (61).

IMMIGRATION ENFORCEMENT: WORKPLACE RAIDS AND DEPORTATIONS

After the passage of the IIRIRA in 1996, formal deportations (i.e., compulsory removals) of immigrants steadily increased from 114,432 per year in 1997 to a peak of 433,034 per year in 2013 (122). Although there have been modest declines since 2013, deportations have remained high, with 340,056 reported in 2016 (122). Many more immigrants (352,882 in 2016) are detained in prison-like facilities while awaiting a review of their deportation cases (124, 137). Although most of these detentions and deportations occur at the border, an increasing percentage involve ICE activities within the interior of the United States (111, 124). During the early 2000s, these interior enforcement (IE) activities often involved highly visible raids (27, 33). As 287(g) and SComm programs were implemented, these IE activities became embedded in local law enforcement efforts (30). As a result, arrests for traffic violations such as driving without a license or driving under the influence (DUI) could lead to detainment and subsequent deportations (30, 111). In contrast to popular beliefs, detentions and deportations of immigrants are not limited to undocumented/unauthorized immigrants. They include detentions and deportations of lawfully present immigrants with LPR status.

These local IE activities have had well-documented effects on health care access, health and their determinants (i.e., income, employment, and education). First, IE activities have produced broad community effects. They have been associated with a heightened sense of fear in immigrant communities, leading individuals to avoid common activities that involve interactions with public officials (11, 49, 73, 96, 109). Consequently, increasing deportation rates have been associated with reductions in enrollment in both Medicaid and WIC among noncitizens (129, 131, 141). Reflecting the negative health consequences of increased psychosocial stress, workplace raids, increasing deportation rates, and the fear of deportation have also been significantly associated with

(*a*) increased poor general health, (*b*) poor cardiovascular health, (*c*) self-reported mental health problems, (*d*) food insecurity, (*e*) delays in receiving prenatal care, and (*f*) increases in low-birthweight babies among Hispanics/Latinos, especially among those who are foreign-born Hispanic/Latino noncitizens (32, 35, 73, 86, 102, 106, 120, 132, 140). Finally, IE activities have also been associated with reduced K–12 school completion, reduced employment, increased childhood poverty, and an increased reticence to trust the judicial system and report crimes (7, 8, 68, 90).

Second, IE activities have had effects on the many US citizen spouses/partners, children, and extended family of detainees and deportees. Some estimates suggest that at least one-fifth of deportations involve a parent with an average of two US-born children (30). In large part through qualitative and mixed-methods studies, researchers have shown that family members (mostly mothers and children) left behind after parental detainments and deportations experience increased economic hardship, psychological distress, externalizing behavioral problems such as aggression, internalizing behavioral problems such as anxiety and depression, and loss of educational aspirations (36, 43, 46, 51, 75). Moreover, the forced family separation initiated by detainments and deportations leads to changes in family dynamics and family functioning that have detrimental consequences for child development (19, 26). Studies evaluating statistical differences between individuals/families with and without a deported friend/parent find unequivocal results: Deportations harm the socioemotional well-being of the friends, parents, and children left behind (4, 26, 35, 110, 130, 150).

Third, IE activities have had their most direct effects on the health and well-being of detainees and deportees themselves and the children who leave the United States to live with deported parents in a foreign country. Few systematic studies of adults and children held in detention are available. However, case studies and reports from multiple government agencies have identified high rates of suicidality and depression and documented serious deficiencies in medical evaluation and treatment within detention centers (84, 137). After deportation, both qualitative interview and survey data show that adult deportees and the US-born children who sometimes leave the United States to join their deported parents experience significant symptoms of psychological distress and material deprivation, feel socially isolated, and have difficulties integrating into schools or workplaces (10, 23, 97, 143). Ten to twenty percent have experienced sustained physical or verbal abuse during the deportation process (9).

STATE AND LOCAL IMMIGRANT POLICIES

In addition to local immigration enforcement efforts, state and local immigrant policies shape immigrant families' health as well as the health of US-born citizens perceived to be immigrants (100, 118). State-level studies in Alabama, Arizona, and California have found that state laws restricting immigrants' rights and stigmatizing undocumented/unauthorized immigrants had chilling effects on the utilization of preventive health care services among immigrants, especially Hispanic/Latino immigrants (115, 119, 144). National studies also show that perceptions of restrictive immigrant policies and anti-immigrant sentiments in a state are associated with higher mortality, poorer self-reported health, and poorer mental health among Hispanic/Latino adults and children, especially those in mixed-status families (55, 80, 132, 134). These changes in utilization and health occurred despite limited and inconclusive evidence from national studies indicating that restrictive state immigrant policies reduce health insurance coverage or that inclusive state immigrant policies improve health insurance coverage (5, 147).

These effects on health and utilization potentially stem from the effects of state-level restrictive policies and anti-immigrant sentiments on perceived discrimination and stress as well as other social determinants of health such as poverty, income, and education (79, 100). Multiple studies

show that Asian and Hispanic/Latino communities feel threatened by anti-immigrant sentiment in the states in which they reside and experience lower quality of life as well as high rates of discrimination, acculturative stress, and psychological distress regardless of their legal-residency status (6, 11, 18, 72, 107, 113, 118). Moreover, state-level restrictive policies (e.g., E-Verify) have been associated with greater unemployment among Mexican noncitizen men and higher poverty rates, whereas more inclusive policies (e.g., IRT benefits) have been associated with increased high school graduation rates and college enrollment (63, 91, 101, 148).

LEGAL RESIDENCY AND DACA STATUS

Even in the absence of workplace raids, deportations, and restrictive state/local immigrant integration policies, the persistent vulnerability of undocumented/unauthorized status has been linked to low health care utilization and poor health (45, 47). Legal-residency status stratifies immigrant populations in the United States by creating a permanent class of US residents with reduced access to the institutional resources that promote health and with greater exposure to acute and chronic stressors that can undermine health for themselves and their children across the life course (121).

Ineligible for public health insurance benefits and excluded from purchasing health insurance on the Marketplaces, undocumented/unauthorized immigrants have the lowest rates of health insurance coverage in the United States (61). Compared with those who have legal-residency status, undocumented/unauthorized Hispanic/Latino immigrant adults are also less likely to have a usual source of care, annual doctor visits, and preventive health screenings (34, 104, 108, 135). These differences in utilization by legal-residency status can mostly be explained by differences in health insurance coverage and other observable characteristics (104, 135). Although emergency department use by immigration status does not vary (135), the lack of insurance coverage for undocumented/unauthorized immigrants does leave many individuals dependent on Emergency Medicaid for childbirth and life-sustaining medical care such as dialysis. In at least one state, North Carolina, the lack of health insurance coverage was associated with an increase in Emergency Medicaid expenditures from 2001 to 2004 (38).

Nationally, undocumented/unauthorized immigrant children also have the lowest rates of health insurance coverage in the United States (61). Additionally, state-level data from California suggest that US-born children of undocumented/unauthorized parents are less likely to be insured than are US-born children with US-born parents (89, 116, 145). California is also the only state to have sufficient data to evaluate differences in health care utilization by children's or parents' legal-residency status. Results are equivocal. One study suggests no significant difference in annual physician visits by either children's or parents' legal-residency status, whereas two studies suggest that children who are undocumented/unauthorized immigrants and/or have a parent who is undocumented/unauthorized have fewer annual physician visits than do US-born children with a US-born parent (89, 116, 145).

Nevertheless, these differences in health insurance coverage and access to care are not uniformly associated with poor health. Although subject to substantial criticism, research on the immigrant paradox has typically found that immigrants have better health status than do US-born natives (31). Reduced access to insurance coverage and health care among undocumented/unauthorized immigrants may diminish the foreign-born advantage but may not entirely erode it. Moreover, as discussed above, restrictive policies and anti-immigrant biases can affect the well-being of all foreign-born persons, regardless of their legal residency, as well as the well-being of their US-born family members.

Focusing on pregnant women, one set of studies finds that, compared with all other women, undocumented/unauthorized pregnant women are less likely to have adequate prenatal care

visits and are more likely to experience complications during delivery, to have preterm births, and to have low-birthweight babies (85, 105). When Medicaid coverage is expanded to include undocumented/unauthorized pregnant women, prenatal care visits increase, rates of extremely low birthweight decline, and infant mortality declines (117). By the same token, when Medicaid coverage is rescinded, adverse birth outcomes and their associated costs rise (85).

In research devoted to mental health, another set of studies finds that undocumented/unauthorized Hispanic/Latino immigrant adults (compared with legally residing immigrants) experience greater acculturative stress, traumatic events, and depressive symptoms (11, 45, 87, 99). However, at least one study finds no difference in mental health by legal-residency status (149). Regarding the mental health of Hispanic/Latino immigrants' children, studies also find that undocumented/unauthorized immigrant children and US-born children with undocumented/unauthorized parents are more likely to experience both internalizing (e.g., depression and anxiety) and externalizing (e.g., aggression) behavioral problems (69, 103). Moreover, studies find that the receipt of DACA can lower undocumented/unauthorized immigrants' risk of mental health problems and also promote the psychological well-being of their children (53, 95, 136).

Only two studies compare the physical health of undocumented/unauthorized immigrants with the physical health of legally residing immigrants. These studies find no differences in self-reported health or blood pressure by legal residency until after stratifying by gender or years in the United States (142, 149). These results suggest that, among Hispanics/Latinos, more recent undocumented/unauthorized immigrants and those who are female may have poorer health as measured by self-reported health, high blood pressure, and body mass index (BMI).

NEXT STEPS: IMPROVING THE HEALTH OF IMMIGRANTS

Immigrants can be viewed as “Americans in waiting” who have the potential to become productive and loyal US citizens (82). From this perspective, immigration is a transition, and the United States should structure federal, state, and local policies to facilitate this transition. Policies of inclusion welcome immigrants with community-based resource centers and individuals to help them navigate their new environments. Policies of inclusion provide resources to assist immigrants with learning English while maintaining proficiency in other languages. Policies of inclusion provide immigrants with the same access to health and human services provided to US citizens. Ultimately, policies of inclusion establish a foundation for mutual understanding, learning, and trust.

Yet over the past two decades, the US federal government and many state governments have increasingly adopted policies of exclusion. These policies have restricted access to public assistance benefits, postsecondary public education, and employment opportunities. They have increased detentions and deportations of both lawfully present and undocumented/unauthorized immigrants and made it increasingly difficult for immigrants to obtain LPR even when they have US-born citizen spouses and children.

Although these policies target immigrants, they have widespread consequences for all US citizens, especially those from racial/ethnic or religious minority populations. They stigmatize immigrant workers and those who employ them. They perpetuate fear and create a sense of threat for anyone whose skin color is not white, who speaks with an accent, or who fails to conform to the dominant behavioral and phenotypical expectations of “American.” They force separation between spouses with mixed status; between grandparents, parents, and their US-born citizen children; and between brothers and sisters born with differing citizenships.

This review has summarized the many health consequences of US federal and state policy choices. The negative health consequences of our current policies begin during pregnancy, resulting in inadequate prenatal care and increased risk of adverse pregnancy outcomes, especially

among foreign-born noncitizen Hispanic/Latina women. The negative health consequences continue into early childhood and adolescence, with an increased risk of internalizing and externalizing behavioral problems, especially among children forcibly separated from a detained or deported parent. They also continue into adulthood, with increased psychosocial stress, prevalence of self-reported mental health problems, poor general health, and poor cardiovascular health among racialized immigrants threatened by deportation. Overall, though previous cohorts of immigrants have arrived in the United States with an immigrant health advantage (54), this advantage may decline across future arrival cohorts. Moreover, our current policies appear to lead to the rapid erosion of any health advantage as immigrants and their US-born children find their place in an America segmented by racial/ethnic and socioeconomic backgrounds.

In the coming decade, continued monitoring and evaluation of the health consequences of US immigrant integration policy choices will be needed. Within the past year, policies of exclusion have been expanded, and more are currently under consideration. Although it was rescinded on June 20, 2018, the US DHS adopted a policy on May 4, 2018, that required the federal prosecution of all immigrants crossing the US border without legal authorization and forced the separation of parents from children as parents await federal prosecution for entry without authorization and review of their asylum cases. The policy resulted in nearly 3,000 children being separated from parents and placed in detention centers. In late 2017 and early 2018, the US DHS also announced decisions to terminate TPS for El Salvadorans, Haitians, Hondurans, Nicaraguans, Nepalese, and Sudanese. These populations have, at most, 18 months to leave the United States voluntarily (with or without their US-born citizen spouses and children) or remain in the United States as undocumented/unauthorized immigrants and face deportation. Finally, the US DHS has proposed expanding the definition of a public charge to include persons who receive publicly funded health insurance coverage, including Medicaid/CHIP or federal subsidies for private health insurance. Given the current research evidence, each of these new policies has the potential to further harm the health of immigrants and their children.

As monitoring and evaluation of the health consequences of these policies continues, researchers need to expand their consideration of different dimensions of health with longitudinal data that better reflect the diversity of immigrants in the United States. Most current research focuses on short-term consequences of policies for access to care and mental health, especially among pregnant women and children. More attention is needed on the long-term health effects of these policies, especially on physical health and men's health. In addition, research on public policies and immigrant health has focused on Hispanic/Latino populations. Greater attention is needed to the health of African, Asian, and Middle Eastern immigrant populations, especially those with Muslim religious backgrounds. For all these population groups, research requires greater country-of-origin precision with an understanding of the sociopolitical histories of each immigrant population.

As monitoring and evaluation continue, researchers also need to evaluate the emergence of "welcoming-city" initiatives (56). These initiatives reflect the proactive efforts of immigrants and community-based partners to respond to exclusionary policies. Within welcoming cities, a myriad of institutions, including schools, health providers, other social service providers, faith-based organizations, and community networks, support the integration of immigrants and help them navigate an increasingly complex environment. These institutions should be supported with information about how to address health issues among immigrants and their families, maintain their access to health care, and develop interventions that address specific concerns such as mental health associated with fear of deportation. Moreover, efforts to integrate immigrants can coexist with restrictive initiatives. Thus, future research should analyze whether inclusive policies promote health outcomes or mitigate the possible harm of restrictive policies.

While they are essential, efforts to monitor and evaluate the health consequences of current policy choices need to be undertaken with considerable care and caution. For example, the modification and addition of questions to national, state, and local surveys regarding politically charged and sensitive topics such as citizenship and visa status must be implemented only after rigorous evaluation of misreporting and their potential effects on response rates. Furthermore, these efforts should happen only in conjunction with well-evaluated strategies to protect the anonymity and confidentiality of respondents. Finally, these efforts should be combined with outreach to and education for study participants regarding the rationale for these questions and their rights to refuse to answer.

This review has focused on the United States, but the United States is not alone in its move toward adopting policies of exclusion. The European Union, Australia, and other high-income countries continue to struggle with how best to select and incorporate immigrant populations. Anti-immigrant and nationalist sentiments have increased in many of these high-income countries, leading them to adopt policies of exclusion and to set aside the potential for inclusion and integration (112). Thus, research on the health consequences of policies of exclusion could benefit from the adoption of a more cross-national comparative framework. Cross-national comparisons can improve understanding of how different sociopolitical and institutional structures influence the adaptation and health of immigrants.

In keeping with a structural perspective, public health research on the consequences of immigrant integration policies must also continue to consider the broader economic and social consequences of these policies. The literature summarized within this review has demonstrated that more restrictive (less inclusive) policies can lead not only to poorer health but also to poorer education and employment outcomes among immigrants and their children. By creating structural barriers to integration and opportunity for some but not for others, these policies determine who is ultimately defined as educated, middle-class, poor, or a criminal. They define who is deserving and who is not, who is welcome and who is not, and ultimately who is American and who is not. As we consider the evidence and make policy choices, we must do so with the recognition that these choices define our future.

SUMMARY POINTS

1. Qualitative approaches to evaluating US immigrant integration policies allow researchers to understand how policies and practices shape the daily life experiences of immigrants, their families, and those who provide services to them.
2. Quantitative approaches to evaluating US immigrant integration policies often utilize variation in the timing and implementation of policies across states or counties together with variation in the populations (e.g., noncitizens versus citizens) affected by policy changes within states or counties to identify the causal effects on health and other socioeconomic outcomes.
3. Declines in public assistance coverage for immigrants after welfare reform led to reductions in health insurance coverage, health care utilization, and potentially health among vulnerable populations of immigrants, especially women and children.
4. Increasing local immigration enforcement activities throughout the past two decades have had well-documented negative effects on health care access, health, and their

determinants (i.e., income, employment, and education) for immigrants and their families, including US-born citizen children.

5. State-level restrictive immigrant integration policies foster fear, increase perceptions of discrimination, and promote psychological distress among Asians and Hispanics/Latinos regardless of their citizenship or legal-residency status.
6. Undocumented/unauthorized immigrant adults and children have the lowest rates of health insurance coverage in the United States, limited access to medical care, and high exposure to acute and chronic stressors that can undermine both physical and mental health.
7. As monitoring and evaluation of the health consequences of US immigrant integration policies continue, researchers need to expand the dimensions of health considered with longitudinal data to better reflect the diversity of immigrants in the United States.
8. As we consider the evidence and make policy choices, we must do so with the recognition that these choices define our future.

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LITERATURE CITED

1. Aizer A. 2003. Low take-up in Medicaid: Does outreach matter and for whom? *Am. Econ. Rev.* 93(2):238–41
2. Aizer A. 2007. Public health insurance, program take-up, and child health. *Rev. Econ. Stat.* 89(3):400–15
3. Alba R. 2005. Bright vs. blurred boundaries: second-generation assimilation and exclusion in France, Germany, and the United States. *Ethn. Racial Stud.* 28(1):20–49
4. Allen B, Cisneros EM, Tellez A. 2015. The children left behind: the impact of parental deportation on mental health. *J. Child Fam. Stud.* 24(2):386–92
5. Allen CD, McNeely CA. 2017. Do restrictive omnibus immigration laws reduce enrollment in public health insurance by Latino citizen children? A comparative interrupted time series study. *Soc. Sci. Med.* 191:19–29
6. Almeida J, Biello KB, Pedraza FI, Wintner S, Viruell-Fuentes E. 2016. The association between anti-immigrant policies and perceived discrimination among Latinos in the US: a multilevel analysis. *SSM - Popul. Health* 2:897–903

7. Amuedo-Dorantes C, Arenas-Arroyo E, Sevilla A. 2018. Immigration enforcement and economic resources of children with likely unauthorized parents. *J. Public Econ.* 158:63–78
8. Amuedo-Dorantes C, Lopez MJ. 2015. Falling through the cracks? Grade retention and school dropout among children of likely unauthorized immigrants. *Am. Econ. Rev.* 105(5):598–603
9. Amuedo-Dorantes C, Pozo S. 2014. On the intended and unintended consequences of enhanced U.S. border and interior immigration enforcement: evidence from Mexican deportees. *Demography* 51(6):2255–79
10. Anderson J. 2015. “Tagged as a criminal”: narratives of deportation and return migration in a Mexico City call center. *Lat. Stud.* 13(1):8–27
11. Arbona C, Olvera N, Rodríguez N, Hagan J, Linares A, Wiesner M. 2010. Acculturative stress among documented and undocumented Latino immigrants in the United States. *Hisp. J. Behav. Sci.* 32(3):362–84
12. Asad AL, Clair M. 2017. Racialized legal status as a social determinant of health. *Soc. Sci. Med.* 199:19–28
13. Ashar S, Burciaga E, Chacón J, Coutin SB, Garza A, Lee S. 2016. *Navigating Liminal Legalities Along Pathways to Citizenship: Immigrant Vulnerability and the Role of Mediating Institutions*. New York: Russell Sage Found.
14. Ayón C. 2017. Perceived immigration policy effects scale: development and validation of a scale on the impact of state-level immigration policies on Latino immigrant families. *Hisp. J. Behav. Sci.* 39(1):19–33
15. Bachmeier JD, Van Hook J, Bean FD. 2014. Can we measure immigrants’ legal status? Lessons from two U.S. surveys. *Int. Migr. Rev.* 48(2):538–66
16. Bailey J, Emerson B, Fitzgerald E. 2011. *2010 immigration-related laws and resolutions in the states*. Rep., Natl. Conf. State Legis., Washington, DC
17. Bean FD, Van Hook JW, Glick JE. 1997. Country of origin, type of public assistance, and patterns of welfare reciprocity among U.S. immigrants and natives. *Soc. Sci. Q.* 78(2):432–51
18. Becerra D, Androff D, Cimino A, Wagaman MA, Blanchard KN. 2013. The impact of perceived discrimination and immigration policies upon perceptions of quality of life among Latinos in the United States. *Race Soc. Probl.* 5(1):65–78
19. Berger Cardoso J, Scott JL, Faulkner M, Barros Lane L. 2018. Parenting in the context of deportation risk. *J. Marriage Fam.* 80(2):301–16
20. Bitler MP, Hoynes HW. 2013. Immigrants, welfare reform, and the U.S. safety net. In *Immigration, Poverty, and Socioeconomic Inequality*, ed. D Card, S Raphael, pp. 315–80. New York: Russell Sage Found.
21. Blank RM. 2001. Declining caseloads/increased work: What can we conclude about the effects of welfare reform? *Fed. Reserv. Bank N. Y. Econ. Policy Rev.* 7(2):25–36
22. Bloemraad I, de Graauw E. 2012. Immigrant integration and policy in the United States: a loosely stitched patchwork. In *International Perspectives: Integration and Inclusion*, ed. J Frideres, J Biles, pp. 205–32. Montreal: McGill-Queen’s Univ. Press
23. Bojorquez I, Aguilera RM, Ramírez J, Cercero D, Mejía S. 2015. Common mental disorders at the time of deportation: a survey at the Mexico-United States border. *J. Immigr. Minor. Health* 17(6):1732–38
24. Borjas GJ. 2002. Welfare reform and immigrant participation in welfare programs. *Int. Migr. Rev.* 36(4):1093–123
25. Borjas GJ. 2003. Welfare reform, labor supply, and health insurance in the immigrant population. *J. Health Econ.* 22(6):933–58
26. Brabeck K, Xu Q. 2010. The impact of detention and deportation on Latino immigrant children and families: a quantitative exploration. *Hisp. J. Behav. Sci.* 32(3):341–61
27. Capps R, Castañeda RM, Chaudry A, Santos R. 2007. *Paying the Price: The Impact of Immigration Raids on America’s Children*. Washington, DC: Urban Inst.
28. Capps R, Fix M. 2013. Sensitive subjects: research choices and presentational challenges in studying immigrant children and families. *New Dir. Child Adolesc. Dev.* 2013(141):79–97
29. Capps R, Fix M, Zong J. 2016. *A profile of U.S. children with unauthorized immigrant parents*. Fact Sheet, Migr. Policy Inst., Washington, DC
30. Capps R, Koball H, Campetella A, Perreira KM, Hooker S, Pedroza JM. 2015. *Implications of immigration enforcement activities for the well-being of children in immigrant families*. Res. Rep., Migr. Policy Inst., Washington, DC

31. Castañeda H, Holmes SM, Madrigal DS, Young M-E de T, Beyeler N, Quesada J. 2015. Immigration as a social determinant of health. *Annu. Rev. Public Health* 36:375–92
32. Cavazos-Rehg PA, Zayas LH, Spitznagel EL. 2007. Legal status, emotional well-being and subjective health status of Latino immigrants. *J. Natl. Med. Assoc.* 99(10):1126–31
33. Chaudry A, Capps R, Pedroza JM, Castañeda RM, Santos R, Scott M. 2010. *Facing our future: children in the aftermath of immigration enforcement*. Rep., Urban Inst., Washington, DC
34. Chavez LR. 2012. Undocumented immigrants and their use of medical services in Orange County, California. *Soc. Sci. Med.* 74(6):887–93
35. Cruz Nichols V, LeBrón AMW, Pedraza FI. 2018. Policing us sick: the health of Latinos in an era of heightened deportations and racialized policing. *PS: Polit. Sci. Polit.* 51(2):293–97
36. Dreby J. 2012. The burden of deportation on children in Mexican immigrant families. *J. Marriage Fam.* 74(4):829–45
37. Drewry J, Sen B, Wingate M, Bronstein J, Foster EM, Kotelchuck M. 2015. The impact of the State Children’s Health Insurance Program’s unborn child ruling expansions on foreign-born Latina prenatal care and birth outcomes, 2000–2007. *Matern. Child Health J.* 19(7):1464–71
38. Dubard CA, Massing MW. 2007. Trends in emergency Medicaid expenditures for recent and undocumented immigrants. *JAMA* 297(10):1085–92
39. Fix M, Passel JS. 2002. *The scope and impact of welfare reform’s immigrant provision*. Discuss. Pap., Urban Inst., Washington, DC
40. Fortuny K, Chaudry A. 2012. *Overview of immigrants’ eligibility for SNAP, TANF, Medicaid, and CHIP*. Issue Brief, Off. Assist. Secr. Plan. Eval., Washington, DC
41. Freaun M, Gruber J, Sommers BD. 2016. Disentangling the ACA’s coverage effects—lessons for policy-makers. *N. Engl. J. Med.* 375(17):1605–8
42. Fuentes-Afflick E, Hessol NA, Bauer T, O’Sullivan MJ, Gomez-Lobo V, et al. 2006. Use of prenatal care by Hispanic women after welfare reform. *Obstet. Gynecol.* 107(1):151–60
43. Gallo S. 2014. The effects of gendered immigration enforcement on middle childhood and schooling. *Am. Educ. Res. J.* 51(3):473–504
44. García SJE. 2014. *An intersectional approach to assimilation and mental health among Mexican-Origin women in the United States*. PhD Diss., Tex. A&M Univ., College Station
45. Garcini LM, Murray KE, Zhou A, Klonoff EA, Myers MG, Elder JP. 2016. Mental health of undocumented immigrant adults in the United States: a systematic review of methodology and findings. *J. Immigr. Refug. Stud.* 14(1):1–25
46. Gulbas LE, Zayas LH, Yoon H, Szlyk H, Aguilar-Gaxiola S, Naterra G. 2016. Deportation experiences and depression among U.S. citizen-children with undocumented Mexican parents. *Child Care Health Dev.* 42(2):220–30
47. Hacker K, Anies M, Folb BL, Zallman L. 2015. Barriers to health care for undocumented immigrants: a literature review. *Risk Manag. Healthc. Policy* 8:175–83
48. Hacker K, Chu J, Arsenault L, Marlin RP. 2012. Provider’s perspectives on the impact of Immigration and Customs Enforcement (ICE) activity on immigrant health. *J. Health Care Poor Underserved* 23(2):651–65
49. Hacker K, Chu J, Leung C, Marra R, Pirie A, et al. 2011. The impact of immigration and customs enforcement on immigrant health: perceptions of immigrants in Everett, Massachusetts, USA. *Soc. Sci. Med.* 73(4):586–94
50. Hagan J, Rodríguez N, Capps R, Kabiri N. 2003. The effects of recent welfare and immigration reforms on immigrants’ access to health care. *Int. Migr. Rev.* 37(2):444–63
51. Hagan J, Rodríguez N, Castro B. 2011. Social effects of mass deportations by the United States government, 2000–10. *Ethn. Rac. Stud.* 34(8):1374–91
52. Haider SJ, Schoeni RF, Bao Y, Danielson C. 2004. Immigrants, welfare reform, and the economy. *J. Policy Anal. Manag.* 23(4):745–64
53. Hainmueller J, Lawrence D, Martén L, Black B, Figueroa L, et al. 2017. Protecting unauthorized immigrant mothers improves their children’s mental health. *Science* 357:1041–44

54. Hamilton TG, Palermo T, Green TL. 2015. Health assimilation among Hispanic immigrants in the United States: the impact of ignoring arrival-cohort effects. *J. Health Soc. Behav.* 56(4):460–77
55. Hatzenbuehler ML, Prins SJ, Flake M, Philbin MM, Frazer MS, et al. 2017. Immigration policies and mental health morbidity among Latinos: a state-level analysis. *Soc. Sci. Med.* 174:169–78
56. Huang X, Liu CY. 2016. Welcoming cities: immigration policy at the local government level. *Urban Aff. Rev.* 54(1):3–32
57. Ingram HM, Schneider AL. 2005. Introduction: Public policy and the social construction of deservedness. In *Deserving and Entitled: Social Constructions and Public Policy*, ed. AL Schneider, HM Ingram, pp. 1–33. New York: State Univ. N. Y. Press
58. Joyce T, Bauer T, Minkoff H, Kaestner R. 2001. Welfare reform and the perinatal health and health care use of Latino women in California, New York City, and Texas. *Am. J. Public Health* 91(11):1857–64
59. Kaestner R, Garrett B, Chen J, Gangopadhyaya A, Fleming C. 2017. Effects of ACA Medicaid expansions on health insurance coverage and labor supply. *J. Policy Anal. Manag.* 36(3):608–42
60. Kaestner R, Kaushal N. 2005. Immigrant and native responses to welfare reform. *J. Popul. Econ.* 18(1):69–92
61. Kaiser Family Found. 2017. *Health coverage of immigrants*. Fact Sheet, Kaiser Family Found., Washington, DC
62. Kalil A, Crosby D. 2010. Welfare leaving and the health of young children in immigrant and native families. *Soc. Sci. Res.* 39(2):202–14
63. Kaushal N. 2008. In-state tuition for the undocumented: education effects on Mexican young adults. *J. Policy Anal. Manag.* 27(4):771–92
64. Kaushal N, Kaestner R. 2005. Welfare reform and health insurance of immigrants. *Health Serv. Res.* 40(3):697–722
65. Kaushal N, Kaestner R. 2007. Welfare reform and health of immigrant women and their children. *J. Immigr. Minor. Health* 9(2):61–74
66. Kaushal N, Waldfogel J, Wight VR. 2014. Food insecurity and SNAP participation in Mexican immigrant families: the impact of the outreach initiative. *B. E. J. Econ. Anal. Policy* 14(1):203–40
67. Kenney GM, Huntress M. 2012. *The Affordable Care Act: coverage implications and issues for immigrant families*. Issue Brief, Off. Assist. Secr. Plan. Eval., Washington, DC
68. Kirk DS, Papachristos AV, Fagan J, Tyler TR. 2011. The paradox of law enforcement in immigrant communities: does tough immigration enforcement undermine public safety? *Ann. Am. Acad. Pol. Soc. Sci.* 641(1):79–98
69. Landale NS, Hardie JH, Oropesa RS, Hillemeier MM. 2015. Behavioral functioning among Mexican-origin children: Does parental legal status matter? *J. Health Soc. Behav.* 56(1):2–18
70. Lofstrom M, Bean FD. 2002. Assessing immigrant policy options: labor market conditions and postreform declines in immigrants’ receipt of welfare. *Demography* 39(4):617–37
71. Lopez MH, Passel JS, Rohal M. 2015. *Modern immigration wave brings 59 million to U.S., driving population growth and change through 2065: views of immigration’s impact on U.S. society mixed*. Rep., Pew Res. Cent., Washington, DC
72. Lopez MH, Paul T, Cary F, Gonzalez-Barrera A. 2013. *On immigration policy, deportation relief seen as more important than citizenship: a survey of Hispanic and Asian American*. Rep., Pew Res. Cent., Washington, DC
73. Lopez WD, Kruger DJ, Delva J, Llanes M, Ledón C, et al. 2017. Health implications of an immigration raid: findings from a Latino community in the Midwestern United States. *J. Immigr. Minor. Health* 19(3):702–8
74. Loue S, Cooper M, Lloyd LS. 2005. Welfare and immigration reform and use of prenatal care among women of Mexican ethnicity in San Diego, California. *J. Immigr. Health* 7(1):37–44
75. Macías LF, Collet BA. 2016. Separated by removal: the impact of parental deportation on Latina/o children’s postsecondary educational goals. *Diaspora Indig. Minor. Educ.* 10(3):169–81
76. Menjívar C. 2006. Liminal legality: Salvadoran and Guatemalan immigrants’ lives in the United States. *Am. J. Sociol.* 111(4):999–1037
77. Migr. Policy Inst. 2018. Children in immigrant families. *Migration Policy Institute*. <https://www.migrationpolicy.org/programs/data-hub/charts/children-immigrant-families>

78. Migr. Policy Inst. 2018. Countries of birth for U.S. immigrants, 1960–present. *Migration Policy Institute*. <https://www.migrationpolicy.org/programs/data-hub/charts/immigrants-countries-birth-over-time>
79. Morey BN. 2018. Mechanisms by which anti-immigrant stigma exacerbates racial/ethnic health disparities. *Am. J. Public Health* 108(4):460–63
80. Morey BN, Gee GC, Muennig P, Hatzenbuehler ML. 2018. Community-level prejudice and mortality among immigrant groups. *Soc. Sci. Med.* 199:56–66
81. Morse A, Pimienta M, Chanda I. 2018. *2017 immigration report*. Rep., Natl. Conf. State Legis., Washington, DC
82. Motomura H. 2006. *Americans in Waiting: The Lost Story of Immigration and Citizenship in the United States*. Oxford, UK: Oxford Univ. Press
83. Motomura H. 2014. *Immigration Outside the Law*. Oxford, UK: Oxford Univ. Press
84. Mukhopadhyay R. 2008. Death in detention: medical and mental health consequences of indefinite detention of immigrants in the United States. *Seattle J. Soc. Justice* 7(2):693–736
85. Munro K, Jarvis C, Munoz M, D'Souza V, Graves L. 2013. Undocumented pregnant women: What does the literature tell us? *J. Immigr. Minor. Health* 15(2):281–91
86. Novak NL, Geronimus AT, Martinez-Cardoso AM. 2017. Change in birth outcomes among infants born to Latina mothers after a major immigration raid. *Int. J. Epidemiol.* 46(3):839–49
87. Ornelas IJ, Perreira KM. 2011. The role of migration in the development of depressive symptoms among Latino immigrant parents in the USA. *Soc. Sci. Med.* 73(8):1169–77
88. Oropesa RS, Landale NS, Hillemeier MM. 2015. Family legal status and health: measurement dilemmas in studies of Mexican-origin children. *Soc. Sci. Med.* 138:57–67
89. Oropesa RS, Landale NS, Hillemeier MM. 2016. Legal status and health care: Mexican-origin children in California, 2001–2014. *Popul. Res. Policy Rev.* 35(5):651–84
90. Orrenius PM, Zavodny M. 2009. The effects of tougher enforcement on the job prospects of recent Latin American immigrants. *J. Policy Anal. Manag.* 28(2):239–57
91. Orrenius PM, Zavodny M. 2015. The impact of E-Verify mandates on labor market outcomes. *South. Econ. J.* 81(4):947–59
92. Osypuk TL, Joshi P, Geronimo K, Acevedo-Garcia D. 2014. Do social and economic policies influence health? A review. *Curr. Epidemiol. Rep.* 1(3):149–64
93. Passel JS. 2016. *Measuring illegal immigration: how Pew Research Center counts unauthorized immigrants in the U.S.* Rep., Pew Res. Cent., Washington, DC. <http://www.pewresearch.org/fact-tank/2016/09/20/measuring-illegal-immigration-how-pew-research-center-counts-unauthorized-immigrants-in-the-u-s/>
94. Passel JS, Cohn D. 2017. *As Mexican share declined, U.S. unauthorized immigrant population fell in 2015 below recession level*. Rep., Pew Res. Cent., Washington, DC. <http://www.pewresearch.org/fact-tank/2017/04/25/as-mexican-share-declined-u-s-unauthorized-immigrant-population-fell-in-2015-below-recession-level/>
95. Patler C, Laster Pirtle W. 2018. From undocumented to lawfully present: Do changes to legal status impact psychological wellbeing among Latino immigrant young adults? *Soc. Sci. Med.* 199:39–48
96. Pedraza FI, Nichols VC, LeBrón AMW. 2017. Cautious citizenship: the deterring effect of immigration issue salience on health care use and bureaucratic interactions among Latino US citizens. *J. Health Polit. Policy Law* 42(5):925–60
97. Peña JM, Garcini LM, Gutierrez AP, Ulibarri MD, Klonoff EA. 2017. Traumatic events and symptoms among Mexican deportees in a border community. *J. Immigr. Refug. Stud.* 15(1):36–52
98. Perreira KM, Crosnoe R, Fortuny K, Pedroza JM, Ulvestad K, et al. 2012. *Barriers to immigrants' access to health and human services programs*. Res. Brief, Off. Assist. Secr. Plan. Eval., Washington, DC
99. Perreira KM, Ornelas IJ. 2013. Painful passages: traumatic experiences and post-traumatic stress among U.S. immigrant Latino adolescents and their primary caregivers. *Int. Migr. Rev.* 47(4):976–1005
100. Philbin MM, Flake M, Hatzenbuehler ML, Hirsch JS. 2018. State-level immigration and immigrant-focused policies as drivers of Latino health disparities in the United States. *Soc. Sci. Med.* 199:29–38

101. Potochnick SR. 2014. How states can reduce the dropout rate for undocumented immigrant youth: the effects of in-state resident tuition policies. *Soc. Sci. Res.* 45:18–32
102. Potochnick SR, Chen JH, Perreira KM. 2017. Local-level immigration enforcement and food insecurity risk among Hispanic immigrant families with children: national-level evidence. *J. Immigr. Minor. Health* 19(5):1042–49
103. Potochnick SR, Perreira KM. 2010. Depression and anxiety among first-generation immigrant Latino youth: key correlates and implications for future research. *J. Nerv. Ment. Dis.* 198(7):470–77
104. Pourat N, Wallace SP, Hadler MW, Ponce N. 2014. Assessing health care services used by California's undocumented immigrant population in 2010. *Health Aff.* 33(5):840–47
- 104a. Radford J, Budiman A. 2018. *Facts on U.S. immigrants, 2016: statistical portrait of the foreign-born population in the United States*. Rep., Pew Res. Cent., Washington, DC. <http://www.pewhispanic.org/2018/09/14/facts-on-u-s-immigrants/#fb-key-charts-population>
105. Reed MM, Westfall JM, Bublitz C, Battaglia C, Fickenscher A. 2005. Birth outcomes in Colorado's undocumented immigrant population. *BMC Public Health* 5(1):100–6
106. Rhodes SD, Mann L, Simán FM, Song E, Alonzo J, et al. 2015. The impact of local immigration enforcement policies on the health of immigrant Hispanics/Latinos in the United States. *Am. J. Public Health* 105(2):329–37
107. Roche KM, Vaquera E, White RMB, Rivera MI. 2018. Impacts of immigration actions and news and the psychological distress of U.S. Latino parents raising adolescents. *J. Adolesc. Health* 62(5):525–31
108. Rodríguez MA, Vargas Bustamante A, Ang A. 2009. Perceived quality of care, receipt of preventive care, and usual source of health care among undocumented and other Latinos. *J. Gen. Intern. Med.* 24(3):508–13
109. Rodríguez N, Paredes CL, Hagan J. 2017. Fear of immigration enforcement among older Latino immigrants in the United States. *J. Aging Health* 29(6):986–1014
110. Rojas-Flores L, Clements ML, Hwang Koo J, London J. 2017. Trauma and psychological distress in Latino citizen children following parental detention and deportation. *Psychol. Trauma* 9(3):352–61
111. Rosenblum MR, McCabe K. 2014. *Deportation and discretion: reviewing the record and options for change*. Rep., Migr. Policy Inst., Washington, DC
112. Semyonov M, Raijman R, Gorodzeisky A. 2006. The rise of anti-foreigner sentiment in European societies, 1988–2000. *Am. Sociol. Rev.* 71(3):426–49
113. Singh S, Schulz AJ, Neighbors HW, Griffith DM. 2017. Interactive effect of immigration-related factors with legal and discrimination acculturative stress in predicting depression among Asian American immigrants. *Community Ment. Health J.* 53(6):638–46
114. Sommers BD, Maylone B, Nguyen KH, Blendon RJ, Epstein AM. 2015. The impact of state policies on ACA applications and enrollment among low-income adults in Arkansas, Kentucky, and Texas. *Health Aff.* 34(6):1010–18
115. Spetz J, Baker L, Phibbs C, Pedersen R, Tafoya S. 2000. The effect of passing an “anti-immigrant” ballot proposition on the use of prenatal care by foreign-born mothers in California. *J. Immigr. Health* 2(4):203–12
116. Stevens GD, West-Wright CN, Tsai KY. 2010. Health insurance and access to care for families with young children in California, 2001–2005: differences by immigration status. *J. Immigr. Minor. Health* 12(3):273–81
117. Swartz JJ, Hainmueller J, Lawrence D, Rodriguez MI. 2017. Expanding prenatal care to unauthorized immigrant women and the effects on infant health. *Obstet. Gynecol.* 130(5):938–45
118. Szkupinski Quiroga S, Medina DM, Glick J. 2014. In the belly of the beast: effects of anti-immigration policy on Latino community members. *Am. Behav. Sci.* 58(13):1723–42
119. Toomey RB, Umaña-Taylor AJ, Williams DR, Harvey-Mendoza E, Jahromi LB, Updegraff KA. 2014. Impact of Arizona's SB 1070 immigration law on utilization of health care and public assistance among Mexican-origin adolescent mothers and their mother figures. *Am. J. Public Health* 104(1):S28–34

120. Torres JM, Deardorff J, Gunier RB, Harley KG, Alkon A, et al. 2018. Worry about deportation and cardiovascular disease risk factors among adult women: the Center for the Health Assessment of Mothers and Children of Salinas Study. *Ann. Behav. Med.* 52(2):186–93
121. Torres JM, Young M-ED. 2016. A life-course perspective on legal status stratification and health. *SSM - Popul. Health* 2:141–48
122. US DHS (US Dep. Homel. Secur.). 2017. *2016 yearbook of immigration statistics*. Rep., US Dep. Homel. Secur., Washington, DC. <https://www.dhs.gov/immigration-statistics/yearbook/2016>
123. US GAO (US Gov. Account. Off.). 2006. *Estimating the undocumented population: a “grouped answers” approach to surveying foreign-born respondents*. Rep. GAO-06-775, US GAO, Washington, DC. <https://www.gao.gov/new.items/d06775.pdf>
124. US ICE (US Immigr. Customs Enforc.). 2017. *Fiscal year 2017 ICE enforcement and removal operations report*. US ICE, Washington, DC. <https://www.ice.gov/removal-statistics/2017>
125. Van Hook J. 2003. Welfare reform’s chilling effects on noncitizens: changes in noncitizen welfare reciprocity or shifts in citizenship status? *Soc. Sci. Q.* 84(3):613–31
126. Van Hook J, Bachmeier JD, Coffman DL, Harel O. 2015. Can we spin straw into gold? An evaluation of immigrant legal status imputation approaches. *Demography* 52(1):329–54
127. Van Hook J, Balistreri KS. 2006. Ineligible parents, eligible children: Food Stamps receipt, allotments, and food insecurity among children of immigrants. *Soc. Sci. Res.* 35(1):228–51
128. Van Hook J, Brown SK, Bean FD. 2006. For love or money? Welfare reform and immigrant naturalization. *Soc. Forces* 85(2):643–66
129. Vargas ED. 2015. Immigration enforcement and mixed-status families: the effects of risk of deportation on Medicaid use. *Child. Youth Serv. Rev.* 57:83–89
130. Vargas ED, Juárez MD, Sanchez GR, Livaudais M. 2018. Latinos’ connections to immigrants: how knowing a deportee impacts Latino health. *J. Ethn. Migr. Stud.* <https://doi.org/10.1080/1369183X.2018.1447365>
131. Vargas ED, Pirog MA. 2016. Mixed-status families and WIC uptake: the effects of risk of deportation on program use. *Soc. Sci. Q.* 97(3):555–72
132. Vargas ED, Sanchez GR, Juárez MD. 2017. Fear by association: perceptions of anti-immigrant policy and health outcomes. *J. Health Polit. Policy Law* 42(3):459–83
133. Vargas ED, Sanchez GR, Juárez MD. 2017. The impact of punitive immigration laws on the health of Latina/o populations. *Polit. Policy* 45(3):312–37
134. Vargas ED, Ybarra VD. 2017. U.S. citizen children of undocumented parents: the link between state immigration policy and the health of Latino children. *J. Immigr. Minor. Health* 19(4):913–20
135. Vargas Bustamante A, Fang H, Garza J, Carter-Pokras O, Wallace SP, et al. 2012. Variations in healthcare access and utilization among Mexican immigrants: the role of documentation status. *J. Immigr. Minor. Health* 14(1):146–55
136. Venkataramani AS, Shah SJ, O’Brien R, Kawachi I, Tsai AC. 2017. Health consequences of the US Deferred Action for Childhood Arrivals (DACA) immigration programme: a quasi-experimental study. *Lancet Public Health* 2(4):e175–81
137. Venters H, Dasch-Goldberg D, Rasmussen A, Keller AS. 2009. Into the abyss: mortality and morbidity among detained immigrants. *Hum. Rights Q.* 31(2):474–95
138. Viruell-Fuentes EA. 2007. Beyond acculturation: immigration, discrimination, and health research among Mexicans in the United States. *Soc. Sci. Med.* 65(7):1524–35
139. Viruell-Fuentes EA, Miranda PY, Abdulrahim S. 2012. More than culture: structural racism, intersectionality theory, and immigrant health. *Soc. Sci. Med.* 75(12):2099–106
140. Wang JS-H, Kaushal N. 2018. *Health and mental health effects of local immigration enforcement*. Rep. w24487, Natl. Bur. Econ. Res. (NBER), Boston, MA
141. Watson T. 2014. Inside the refrigerator: immigration enforcement and chilling effects in Medicaid participation. *Am. Econ. J. Econ. Policy* 6(3):313–38
142. Wen M, Maloney TN. 2014. Neighborhood socioeconomic status and BMI differences by immigrant and legal status: evidence from Utah. *Econ. Hum. Biol.* 12:120–31

143. Wheatley C. 2011. Push back: US deportation policy and the reincorporation of involuntary return migrants in Mexico. *Lat. Am.* 55(4):35–60
144. White K, Blackburn J, Manzella B, Welty E, Menachemi N. 2014. Changes in use of county public health services following implementation of Alabama’s immigration law. *J. Health Care Poor Underserved* 25(4):1844–52
145. Ybarra M, Ha Y, Chang J. 2017. Health insurance coverage and routine health care use among children by family immigration status. *Child. Youth Serv. Rev.* 79:97–106
146. Ybarra VD, Sanchez LM, Sanchez GR. 2016. Anti-immigrant anxieties in state policy: the Great Recession and punitive immigration policy in the American states, 2005–2012. *State Polit. Policy Q.* 16(3):313–39
147. Young M-ET, Leon-Perez G, Wells CR, Wallace SP. 2017. Inclusive state immigrant policies and health insurance among Latino, Asian/Pacific Islander, Black, and White noncitizens in the United States. *Ethn. Health.* <https://doi.org/10.1080/13557858.2017.1390074>
148. Young M-ET, León-Pérez G, Wells CR, Wallace SP. 2018. More inclusive states, less poverty among immigrants? An examination of poverty, citizenship stratification, and state immigrant policies. *Popul. Res. Policy Rev.* 37(2):205–28
149. Young MT, Pebley AR. 2017. Legal status, time in the USA, and the well-being of Latinos in Los Angeles. *J. Urban Health* 94(6):764–75
150. Zayas LH, Aguilar-Gaxiola S, Yoon H, Rey GN. 2015. The distress of citizen-children with detained and deported parents. *J. Child Fam. Stud.* 24(11):3213–23

RELATED RESOURCES

- Dreby J. 2010. *Divided by Borders: Mexican Migrants and Their Children*. Oakland: Univ. Calif. Press
- Gelatt J, Bernstein H, Koball H. 2017. State immigration policy resource. *Urban Institute*. <https://www.urban.org/features/state-immigration-policy-resource>
- Gonzales RG. 2015. *Lives in Limbo: Undocumented and Coming of Age in America*. Oakland: Univ. Calif. Press
- Natl. Res. Cent. Hisp. Child. Fam. 2018. Interactive data tools. *National Research Center on Hispanic Children and Families*. <http://www.hispanicresearchcenter.org/resources/interactive-data-tools/>
- Suárez-Orozco C, Yoshikawa H. 2013. Undocumented status: Implications for child development, policy, and ethical research. *New Dir. Child Adolesc. Dev.* 141:61–78
- Yoshikawa H. 2011. *Immigrants Raising Citizens: Undocumented Parents and Their Young Children*. New York: Russell Sage Found.
- Zayas LH. 2015. *Forgotten Citizens: Deportation, Children, and the Making of American Exiles and Orphans*. New York: Oxford Univ. Press



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