UC Berkeley
UC Berkeley Previously Published Works

Title

Immigration as a social determinant of health.

Permalink

https://escholarship.org/uc/item/88x898z6

Authors

Castañeda, Heide
Holmes, Seth M
Madrigal, Daniel S
et al.

Publication Date

2015-03-01

DOI

10.1146/annurev-publhealth-032013-182419

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Immigration as a Social Determinant of Health

Heide Castañeda,[1,*] Seth M. Holmes,[2,3,*] Daniel S. Madrigal,[2] Maria-Elena DeTrinidad Young,[4] Naomi Beyeler,[5] and James Quesada[6]

[1]Department of Anthropology, University of South Florida, Tampa, Florida 33620; email: hcastaneda@usf.edu

[2]School of Public Health and [3]Graduate Program in Medical Anthropology, University of California, Berkeley, California 94720; email: sethmholmes@berkeley.edu, dsmadrigal@gmail.com

[4]Fielding School of Public Health, University of California, Los Angeles, California 90024; email: mariaelenayoung@yahoo.com

[5]Global Health Sciences, University of California, San Francisco, California 94105; email: nbeyeler@gmail.com

[6]Department of Anthropology and Cesar Chavez Institute, San Francisco State University, San Francisco, California 94132; email: jquesada@sfsu.edu

Annu. Rev. Public Health 2015. 36:375–92

First published online as a Review in Advance on December 10, 2014

The *Annual Review of Public Health* is online at publhealth.annualreviews.org

This article's doi:
10.1146/annurev-publhealth-032013-182419

Copyright © 2015 by Annual Reviews.
All rights reserved

*These authors contributed equally to this work.

Keywords

immigration, immigrant health, migrant health, social determinants of health

Abstract

Although immigration and immigrant populations have become increasingly important foci in public health research and practice, a social determinants of health approach has seldom been applied in this area. Global patterns of morbidity and mortality follow inequities rooted in societal, political, and economic conditions produced and reproduced by social structures, policies, and institutions. The lack of dialogue between these two profoundly related phenomena—social determinants of health and immigration—has resulted in missed opportunities for public health research, practice, and policy work. In this article, we discuss primary frameworks used in recent public health literature on the health of immigrant populations, note gaps in this literature, and argue for a broader examination of immigration as both socially determined and a social determinant of health. We discuss priorities for future research and policy to understand more fully and respond appropriately to the health of the populations affected by this global phenomenon.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

INTRODUCTION

Although immigration and immigrant populations have become increasingly important foci in public health research and practice, public health scholars have seldom applied a social determinants of health approach in this area. A social determinants of health approach focuses on the structural factors, aside from medical care, that are determined by social and economic policies and inequalities and have important effects on health (22). This approach, as we define it, focuses especially on upstream, macrolevel social factors. Social determinants are increasingly recognized as central to health, as global patterns of morbidity and mortality follow inequities rooted in conditions produced and reproduced by political economy, such as social structures, policies, and institutions. There is growing acceptance by researchers and practitioners that they must understand how social and institutional contexts shape individuals' lives and how factors such as employment, housing and living conditions, access to food and social services, and legal status are consequential for well-being. Immigration is a process that is both the result of these factors and can result in changes in each of these areas.

As migration flows increase worldwide, the social determinants of health surround the many individuals who choose to or are forced to leave their homelands for survival, work, safety, and, in some cases, a new home in another land. Yet, these two profoundly related areas in public health—social determinants of health and immigration—are not in sufficient dialogue with each other. We argue that this disconnect has resulted in missed opportunities for research, practice, and policy work. In this article, we examine the primary frameworks used in the recent public health literature on the health of immigrant populations, note gaps in this literature, and argue for a broad examination of immigration as both socially determined and a social determinant of health. We close with a discussion of priorities for future research, practice, and policy to further investigate and respond responsibly to the health of individuals and communities affected by this global phenomenon. Such work is necessary for the field of public health to eliminate health inequities and aid in the development of healthy societies for all people.

Immigration as a Public Health Challenge

According to recent World Health Organization estimates, there are at least one billion migrants across the world (141), whose lives have been shaped by social determinants in their homelands and who face new social, economic, and political conditions in destination countries. In the United States, heightened immigration enforcement in recent years, including historic levels of deportation, has resulted in negative impacts on health and well-being (2, 47, 92), making immigration policy a salient issue for public health that requires greater attention. As debates over new immigration policies continue, reforms to the current set of laws need to consider health impacts, especially those on the 11 million undocumented people who live under discriminatory policies, experiencing prejudicial attitudes, and lacking access to critical health resources.

An extensive literature examines specific health outcomes and issues among immigrant populations and, as a result, the overall immigrant experience. For example, past articles in the *Annual Review of Public Health* have brought attention to the health status of immigrants broadly (61), as well as to that of specific groups such as migrant and seasonal farmworkers (7, 134), along with the impact of acculturation on health (69). Prominent public health organizations have also recently commented on the impact of immigration policies on increasing stress and decreasing access to health care (4–6, 93). However, this growing public health literature on immigration and immigrants, as we illustrate below, has retained a relatively narrow focus on behavioral and cultural topics such as the role of acculturation, adherence to treatment regimens, health

screening, eating behaviors, and exercise behaviors, as well as culturally competent practices and interventions.

Whether voluntary or involuntary, migration poses challenges to individuals and communities, requiring an almost complete realignment of daily life that can have significant social, economic, and health consequences (110). Although immigration is a consequence of social determinants, such as poverty, occupational and educational opportunities, and political persecution, immigration must also be positioned as a social determinant in its own right. Lacking are studies that apply a broad social determinants lens to understand immigrants' experiences and how related policies directly impact health. Without this perspective, the immigration experience is cast as secondary to more proximal factors such as behavior, language, norms, income, or education, thus limiting explanatory power and the capacity to create effective interventions that respond to some of the root causes of ill-health in these communities. The enormous consequences of immigration on daily life, and thus on broader health and well-being, cannot be reduced simply to a "protective factor" or an acculturative "stressor" that affects health. Rather, immigration must be understood as a broad social determinant of health and well-being. Examining immigration through a social determinants of health lens provides a more holistic approach to allow greater understanding of these complex, interrelated, and far-reaching impacts.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Social Determinants of Health

Research has increasingly identified ways in which social (including economic) inequality imposes specific risks and constraints on choice (22). Critical public health approaches propose a broad range of overlapping concepts for understanding and responding to the effects of social inequality: These include social epidemiology (37, 43, 105), the eco-social or socio-environmental perspective (23, 24, 65, 67, 115, 129), eco-epidemiology (128), and the risk environment framework (114, 113, 125). They call for a focus on social inequalities through concepts such as fundamental social causes (73–75, 103), social stratification (78), social determinants of health inequality (63, 76, 78, 80, 125), income inequality (63), webs of causation (65), higher-order causal-level structural factors (87), upstream factors (86), discrimination, and racial disparities in health outcomes (42, 66, 71, 79, 123, 144). Drawing from the social sciences, frameworks have incorporated concepts related to the importance of social structures and social inequalities, such as political economy and political and economic determinants (94, 95, 121), structural violence (41), symbolic violence (19, 21, 54), structural vulnerability (29, 54, 111), conjugated oppression and hierarchies of embodied suffering (20, 52), zones of abandonment (16), intersectionality (136, 139), and discourses of deservingness (28, 53, 81, 119, 133, 143). Here, we do not explore each of these concepts in depth because they overlap and together inform our understanding of the importance of the social determinants lens for understanding the health effects of immigration. Rather, we utilize a broad social determinants of health approach, focusing on the health effects of social structures, such as economic inequalities, citizenship inequalities, ethnic hierarchies, and gender hierarchies, to name a few.

These concepts have both influenced and emerged from models that focus on the social determinants of health with a focus on upstream fundamental causes, many of which are useful for examining health issues in immigrant populations and for guiding related population-level interventions. These approaches all emphasize the construction and impact of social structures and the relative positions of individuals and communities in stratified hierarchies and power relationships. In addition, these approaches share a concern with the interconnectedness of social, structural, and/or ecological factors that affect health status. The analysis of disease causation, as well as intervention strategies and policy changes to address it, requires an understanding

of how social, physical, and biological phenomena interrelate and overlap. As a result, pathways and interactions are understood as multicausal and complex, requiring attention to institutional practices and to the relationships between macrostructural processes and microlevel behaviors.

Seeing Immigration through a Social Determinants of Health Lens

We argue that if substantive changes in health outcomes are to be achieved, immigration must be treated as a health determinant itself. Being an immigrant limits behavioral choices and, indeed, often directly impacts and significantly alters the effects of other social positioning, such as race/ethnicity, gender, or socioeconomic status, because it places individuals in ambiguous and often hostile relationships to the state and its institutions, including health services. How can public health researchers and practitioners respond to the challenges posed by this complex social determinant of health?

To delineate the advantages of a social determinants of health lens on immigration, we must first review existing approaches in the public health literature. In the following sections, we summarize the most common frameworks—which we denote as behavioral, cultural, and structural—that are evident in the immigration and health literature published since 2000.

RECENT STUDIES OF IMMIGRATION AND HEALTH: PRIMARY FRAMEWORKS

As a general pattern, most articles have focused on behavioral or cultural factors, whereas the consideration of structural factors is more limited. Each of these frameworks for understanding the relationship between immigration and health is explored more fully below through a summary of the assumptions, topics, and outcomes most commonly considered and includes limitations inherent to each framework. In the remainder of this article, we focus primarily on US-based studies because of the unevenness of the literature on immigrant health in other countries, as well as the very different circumstances internationally, including different systems of health care and prevention; dissimilar notions of race and ethnicity in various countries; and unique national developments in public health as a field of scholarship and practice.

Behavioral Framework

The behavioral framework is used most often in the current literature. In this approach, the individual is generally the primary unit of analysis and intervention. As a result, the focus tends to be on individuals' behavioral choices, and thus the recommendations focus on individuals. Although social or cultural factors influencing these choices are sometimes also recognized, these factors tend not to be foci of the analysis.

The primary topics addressed by the behavioral approach to immigration and health include health service utilization (44, 64), cancer risk behaviors and screening (18, 83, 146), chronic disease (30, 60, 70), and mental health (10, 64). Most articles conduct analyses of immigrants' health practices rather than of the social or economic contexts of these practices. Within this literature, a primary area of focus involves identifying specific behavioral factors that may explain the healthy immigrant effect or Latino health paradox, such as low prevalence of smoking (50, 120, 137). The healthy immigrant effect or Latino paradox refers to a common pattern in immigrant, and specifically Latino immigrant, population health that appears to contradict expectations based on the well-documented social gradient in health, in which individuals of higher socioeconomic

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

status (SES) fare better than do those of lower SES. However, these paradoxes have long been critiqued for their ambiguity of definition, limited empirical evidence, limited testability, and lack of intervention application (1, 54).

In focusing primarily on individual health behaviors, researchers emphasize behavior change theories to understand the causes of disease and design interventions. For example, a review article on breast cancer screening found that the most common theory underlying such programs is the health belief model (100). These individually oriented theoretical approaches appear to arise from this behavioral focus and subsequently perpetuate the primary focus on personal responsibility, self-esteem, and self-efficacy as opportunities for changing health behavior within the existing context, rather than investigating contextual drivers of behaviors and the possibility for upstream change. The centrality of personal responsibility within the immigrant health literature is highlighted in work on nutrition within maternal and child health. Most studies in these areas emphasize parental responsibility for child well-being, calling for programs aimed at improving parenting skills or modifying parenting practices or attitudes (32, 84, 99) as a primary intervention strategy. And yet, most of these studies fail to recognize social determinants such as neighborhood access to healthy food, differential pricing correlated with nutrition, and labor system hierarchies that complicate certain groups' ability to afford healthy food or to expend energy obtaining it. In general, a narrow focus on individual behaviors or outcomes is likely to be inadequate for explaining the origins of community-level inequities.

The use of health behavior change theories in understanding immigrant health leads to an individualization of responsibility and risk and assumes individual choices are largely unconstrained by social structures, policy environments, and economics (54). Although many authors acknowledge structural factors when introducing their studies (e.g., 55), these tend to be overlooked when analyzing the data and identifying opportunities for interventions. Thus, this framework has several limitations. First, it is largely deficit based, viewing health behavior as the result of a lack of personal education, motivation, readiness, or self-efficacy. Second, it places accountability for behavior change on the individual, rather than locating accountability within the social systems that drive poor health outcomes. In the case of immigration, phenomena such as labor policies and immigration enforcement create systems of prejudice and fear that impinge on health behavior. This focus results in a narrow range of proposed interventions because it cannot sufficiently account for the historical, political economic, and societal processes associated with certain health behaviors. Without addressing larger contextual factors, recommendations fall back on interventions that place the responsibility on the individual.

One area in which behaviorally focused research and interventions begin to expand past individual health behaviors in the literature on immigrant populations is the use of acculturation frameworks. However, many current theories and definitions of acculturation and "culture" in general focus on the individual level. Acculturation is often cited as one of the drivers of individual-level behavioral choices, thus linking behavioral frameworks with cultural ones and making them difficult to disentangle. Such writing may reinforce perspectives on immigrants that may not be empirical, useful, or effective, as we discuss in the following section.

Cultural Framework

The cultural framework is the second most common approach to understanding immigration and health in the public health literature. Articles in this framework emphasize the role of assumed group traits, shared beliefs, values, customary practices, or traditions, which are often linked explicitly to race, ethnicity, or national origin. These are understood to influence behaviors, shape choices, and affect perceptions of health-related risk.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

The cultural framework is used in relation to topics and outcomes such as acculturation (e.g., 31, 76, 132, 145), mental health (e.g., 9, 33), chronic disease (11, 38, 122), health care access (e.g., 31), maternal and child health (26, 104, 145), substance use (132), physical activity and obesity (76), and social capital (3, 15, 14). Most outcomes within this framework are captured as individual-level behaviors. Thus, this framework tends to presume that cultural or ethnic group membership becomes a major—even primary—determinant of health-related individual behaviors and tends to assume that the responsibility for adopting healthy cultural practices lies with individuals. Thus, the studies in the cultural framework share many assumptions with the studies in the behavioral framework discussed above. Some studies within this framework acknowledge social factors such as social networks, ties, or social capital (e.g., 15, 14) and the health effects of stress or allostatic load (e.g., 101). Within this framework, although the data imply political, economic, and historical realities related to race and ethnicity, the primary focus remains on how race and ethnicity—through culture—affect individual health-related behaviors.

One primary assumption within this framework is that immigrant or minority groups are "acculturating," or moving toward behaviors that are more in line with the mainstream group. Typically, this process is found to impact health negatively (31, 62, 76, 132, 145), with level of acculturation directly corresponding with individual-level health risk behaviors, especially diet, smoking, and use of health services. Meanwhile, the mainstream population is not defined or described in terms of cultural traits or behaviors (57). The practice of assuming a mainstream population toward which other groups are presumed to be acculturating is often subtly and dangerously ethnocentric. In other cases, researchers emphasize resiliency and the protective factors associated with biculturalism or the maintenance of cultural patterns (e.g., 9). This emphasis is especially true for the healthy immigrant or Latino paradox, where interventions focus on maintaining positive cultural practices. Although this reframes culture as a positive factor, it also risks implying homogeneity or a permanence of traits or behavioral characteristics. Indeed, the use of acculturation in health research has been critiqued because of its use of poorly defined and operationalized variables for culture and largely unexplored underlying assumptions (57, 89, 107, 136, 135). Indeed, few articles in this framework define culture or provide empirical backing for their representations of culture (57).

Studies may rely on superficial or stereotyped notions of culture and present a static view of intergroup relations and a belief that acculturation is more or less uniform across populations. Culture and ethnicity are often conflated: Cultural groups are generally defined by ethnic groups (e.g., Hispanics, Asians) regardless of sociohistorical and geographic differences. Researchers may view Latino immigrants, for example, largely as a homogenous group instead of accounting for different histories and contexts of migration, class, legal status, SES, and the large nonimmigrant Latino population in the United States. Although much of the acculturation and healthy migrant paradox literature focuses on the potentially protective factor of individual behaviors linked to cultural practices, a wide body of literature focuses on negative cultural narratives of immigrant populations. Of particular concern are simplified notions of gender, family relations, and cultural values such as "fatalism" and "machismo" (e.g., 26). This practice produces an essentialization of culture, which implies that underlying, socially shared dispositions give rise to behavioral characteristics of specific racial/ethnic groups. Thus, such studies ultimately revert back to an apolitical and ahistorical understanding of differences between populations that eschews social inequalities and social determinants of health. Related to the behavioral framework, the logic remains that if beliefs and attitudes explain differences in behaviors, then behavior-based interventions can be made more effective if they are more culturally relevant. Again, however, studies in this framework largely tend to assume that the responsibility for adopting the desired cultural values and practices lies with individuals.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

The overreliance on cultural explanations for immigrant health outcomes obscures the impact of contributing structural factors, such as poor access to transportation, elevated health care costs, changing access to healthy foods, or differences in labor practices (136, 135)—factors that affect immigrant communities disproportionately regardless of their cultural, racial, or ethnic background.

Structural Framework

The third but least common framework employed in recent scholarship on immigration and health is the structural framework. This framework interprets health outcomes through understanding and accounting for the large-scale social forces that impact health. Research utilizing this approach tends to focus on either (*a*) access to health care or (*b*) the health outcomes directly associated with immigration status, including living and working conditions and the impact of deportation and detention.

The most common structural factor explored in the literature is access to health care. Although access varies among immigrant populations (e.g., 36), immigrants, and especially undocumented immigrants, clearly experience limited access to health care (e.g., 6, 97). Scholarship in public health that takes a structural approach to understanding limited health care access among immigrant communities includes analyses of the social and policy determinants, such as the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) (e.g., 17, 45, 77), a pattern that is expected to continue for many immigrants under the Affordable Care Act of 2010. This analysis of the structural factors impacting access to health care is the largest focus within the structural framework; however, access is often one of the downstream results or products of larger structural conditions.

The second, less common area in this framework explores the general impacts of immigration status, specifically how immigration status impacts immigrants' ability to access health-protective resources. Status-related impacts include social, economic, and political factors that are external to immigrant bodies and that are shaped by local and national policies, such as housing conditions, neighborhood safety, and labor protections. For a few of these factors, immigrants are explicitly excluded from resources that other US residents receive (e.g., preventive care, certain labor protections). For other factors, immigrants experience challenges similar to those of other low-income communities of color (e.g., poor housing quality, poor neighborhood safety). The additional burden that immigrants face, however, is that they often choose not to interact with government services that could provide some relief to their situations out of fear that the interaction could lead to deportation or family separation. Some articles provide reviews focused on subpopulations of immigrants, including farmworkers (134), women (91), and children (91, 118), whereas others examine how the stress of racial discrimination, lack of legal status, and general exclusion affects mental health (27, 127, 148), and specifically depression (46, 51, 72). Many immigrant groups experience discrimination that exacerbates the challenges of living as immigrants (117, 148) or results in lower self-worth (111). Other articles discuss workplace issues, specifically violation of labor rights (34, 35, 130). This focus on the health effects of immigration status fits more squarely with a broad, macrostructural social determinants of health lens. Finally, an important minority of articles discusses the direct impact of legal status, including the health effects of immigration enforcement actions such as detention, deportation, and family separation (47, 48, 85, 92, 116, 126, 131, 138). Other articles focus on the stress and other impacts resulting from losing a family member through deportation (2, 85, 126, 131, 138). This focus on legal status is congruent with a social determinants of health lens.

Scholarship utilizing a structural framework frequently conceptualizes and measures social position through variables such as income or highest education level. However, in applying this

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

approach to immigrants, social position should also include examination of the institutional practices and policies that limit rights, resources, and sense of security in navigating everyday life. While an analysis of the impact of these forms of exclusion is critical to understanding the larger context, most articles within this framework limit themselves to explaining access to care rather than addressing the broader impacts of other public policies in the inclusion and exclusion of immigrant populations or the impact of ethnic/racial hierarchies. Overall, we see inadequate attention to the various social and policy-related factors that affect immigrant health outside of health care access, even though such structural approaches have the most potential to engage with the laws, policies, and enforcement activities that define the health landscape that immigrants must navigate. An explicit commitment to the social determinants of health lens can aid researchers, practitioners, and policy makers in addressing these gaps.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

ADDRESSING THE KNOWLEDGE GAPS

Priorities for Future Research

Given the limitations of the dominant behavioral and cultural frameworks in immigration and health, as well as the potential of structural frameworks to provide greater insight into practice and policy opportunities, we delineate a number of conceptual and topical gaps in the current public health literature on immigration and health.

We take the strengths and relatively unharnessed potential of the structural framework as our point of departure, arguing that these should be further developed within a social determinants approach to immigration and immigrant health. The structural framework, as noted above, has been applied primarily in research on access to care; this scope must be expanded significantly to include economic and social opportunities and resources, as well as other specific structural factors, such as access to legal support, housing, food security, and living and working conditions. Conceptually, these specific factors and related policies should be employed to explore and intervene on the structural factors that affect immigrant population health. Such a focus would better integrate and emphasize nonmedical factors that influence health, especially upstream determinants such as living and working conditions.

Furthermore, the broader historical context of migration must be more explicitly considered in scholarship on immigrant health. This focus should include attention to the political economic circumstances that produce the motives for migration. Scholars often strive to distinguish between voluntary and forced migration because each produces different consequences in host countries. Voluntary migrants are often assumed to choose to cross borders in search of economic opportunity, whereas involuntary migrants (or refugees) are forced by circumstances to flee their home countries in search of physical security. However, the conventional understanding of active choice in the migration decision has been contested. People can be driven out of their home countries by economic desperation—that is, forcibly displaced by material factors aside from war and natural disasters—and some have argued that the idea of voluntary migration ignores the realities of structural violence that push people out of their home countries (see, e.g., 54, 108, 147). Immigration is fundamentally determined by social, economic, and political inequalities. This reality is particularly important because when immigrants' circumstances are viewed as a choice, they are less likely to be viewed by policy makers as inherently deserving of social and health services, as we discuss in the section on deservingness below.

Although many of the studies reviewed here examine immigration as a critical variable in the experience of health and sickness, they have a heavy focus on health behaviors, health care interactions, and access. Research questions should be expanded to consider the policies that shape

the broader health landscapes in which immigrants live. The ability to document measures such as leading health indicators is necessary to highlight where immigrants deviate from national populations (61); however, we also need further explanations of the root causes that lead to harsh conditions for immigrants by acknowledging the damage of structural conditions and related policies. Immigration and immigration status affect health through many mechanisms, including fear, stress, differential access to resources, experiences of prejudice and violence, and differential access to safe work and housing. In addition, immigration impacts the health of nonimmigrants. For example, most children living in 2.3 million mixed-status families are US citizens by birth. They are directly affected by the undocumented status of their family members; they access health care benefits at a lower rate or receive delayed treatment (49, 56), experience greater developmental risk in childhood (12, 98, 149), and experience higher levels of family conflict and stress (131), including the effects of deportation of individual household members, often parents (2, 47, 48, 92, 116, 131). In addition, children are often left in the community of origin and experience negative effects of familial separation. These situations underscore that immigrants are embedded in social units, creating a cumulative ripple effect on households and communities that must be considered.

Immigrant legal status must be understood as a fluid characteristic that can change—often multiple times—over the course of an individual's lifetime owing to personal circumstances (e.g., marriage) and shifting policy environments (e.g., legalization). Some examples include the relief provided under the Immigration Reform and Control Act of 1986, which allowed some 2.7 million migrants to gain legal status, and the deferred action for childhood arrivals (DACA) program announced in 2012, which has provided semilegal status to more than a half-million undocumented youth for a renewable period of two years. In both of these examples, the variable of legal status changed virtually overnight, but the lifelong experiences that affect health status may remain. Thus, legal status should not be viewed simply as a dichotomous variable; in addition to a number of ambiguous situations [such as DACA and temporary protected status (TPS)], federal policies stratify the relationships between various statuses and access to services and programs. The 2010 Affordable Care Act, for example, draws on federal eligibility categories that distinguish between "qualified" and "nonqualified" immigrants as well as "lawfully present immigrants" (which includes both "qualified" and some "nonqualified" categories) and "not lawfully present immigrants."

Similarly, we must investigate and respond to the impacts of specific, and often local, immigration, labor, and education policies. Doing so is especially important for undocumented people; for example, the vulnerabilities associated with deportation and family separation remain understudied, even though undocumented status is associated with socioeconomic indicators known to affect health. Recent studies have begun to examine the interaction between deportation and well-being, for example on mental health (2), drug use (116), and HIV risk (92). A recent systematic review of the health impact of immigration policies found that the majority of policies focused on the impact on access to health care rather than on specific health outcomes (82). In addition, research is needed into specific labor and education policies: for example, states adopting explicit rights for farmworker organizing (142), adopting equal minimum wages for restaurant workers and other workers, changing identification card or driver's license eligibility, and implementing policies for educational access for immigrant children. Often, these are state-level changes that affect only some populations, such as those in new settlement areas facing a large influx of immigrants for the first time without an infrastructure established to serve them (102). Studies should account for such localized circumstances, striving for deeper understanding of a policy's impact rather than seeking to make broad generalizations for all immigrant populations.

Although arguably very important, deservingness of immigrant populations has been a relatively neglected area. Deservingness refers to how some groups, but not others, are considered worthy of attention, investment, and care, particularly against the backdrop of the retrenchment of the

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

welfare state and increasing health care costs (28, 53, 81, 90, 109, 119, 133, 143). Conceptions of deservingness are distinct from formalized entitlements as well as from pragmatic questions of access. However, "although we have well-developed analytic toolkits for investigating questions of both entitlement and access, the subtler moral positions that undergird them—identified here as local ways of reckoning health-related deservingness—remain conspicuously underinvestigated" (143, p. 805). Given the many ways in which assumptions about deservingness affect public opinion, elections, and allocation of social and health resources, this is an especially important area of future study related to immigration and health. Indeed, deservingness may be inflected by immigration status, language use, accent, perceived ethnicity or race, and many other factors.

Despite the relatively common focus on ethnicity and "culture" in the literature on immigration and health, there is a lack of discussion of the role of discrimination, including racism and anti-immigrant prejudice. We know from public health research that forms of racism and prejudice affect health significantly (59, 68, 71, 144), likely through factors such as stress, violence, and exclusion from resources. These factors are likely very important in the experiences and health outcomes of immigrants (54) and should receive more research and political attention.

Finally, we recommend increasing the focus on resiliency. Resiliency, or the ability of a population to respond positively despite factors challenging its health (140), represents a strengths-based research approach as opposed to the more common deficit and sickness focus in health research. This type of approach related to immigration and health is found primarily within the focus on the Latino paradox or the immigrant health paradox. However, given critiques of these frameworks, especially in clumping together people with diverse experiences, histories, and statuses (1), researchers must explore resiliency in other ways among immigrant individuals, families, and communities. This expansion may include analyses of such positive aspects as social capital and informal care networks as well as community organizing and resistance to policies and practices detrimental to health. Taking seriously the resiliency of immigrants suggests a commitment to working with communities not only to understand their needs but also to identify and build on their strengths. Thus, research with this focus may benefit especially from a community-based participatory framework (8, 88).

Policy Implications

The social determinants approach to immigrant health compels public health practitioners to support specific policy and programmatic interventions, in addition to attending to the future research priorities discussed above. Despite the considerable health effects of migration, there is a lack of coordinated policy and program efforts to address these effects. Policy making on migration has been conducted generally by institutions composed of international aid, security, immigration enforcement, trade, and labor, which rarely include the health sector and often have incompatible goals (e.g., 150). And even though the hallmark 1978 Declaration of Alma-Ata expressed the need for action by governments and health and development workers to protect and promote the health of all people, it is apparent that such action—not to mention its accomplishments—has been woefully inadequate for immigrants among many other populations. Equity remains the chief human rights dilemma in health in the twenty-first century (40, 39). Taking seriously immigration as a social determinant of health in its own right requires policy efforts that emphasize the following:

1. Equal access to health care for im/migrants. Access to prevention and treatment (39) should be "in proportion to need without discrimination" (112); yet, as evidenced by the Affordable Care Act of 2010, the current system continues to exclude many immigrants, often based

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

on assumptions of deservingness. The Affordable Care Act has expanded health insurance and access to many immigrants. For example, lawfully present noncitizens can purchase subsidized private insurance plans through the health insurance exchanges. However, many lawful permanent residents are excluded from accessing Medicaid because of a five-year residency requirement. Undocumented immigrants are excluded entirely from the ACA's various individual insurance provisions, as are some individuals with temporary status (e.g., TPS or DACA) (96). Thus, there is significant policy work to be done to expand access to all immigrant groups. In addition, there are not enough community health centers to serve the intended population (124). Contrary to popular perceptions, immigrants use fewer health services (13, 25, 106) and tend to rely more on local community health centers and their programs. Community health centers will continue to be a vital health care source throughout most of the country for immigrants without coverage and should be supported to decrease the negative health effects of immigration, not only on immigrants but also on nonimmigrants in their communities and societies.

2. Improved enforcement of existing labor laws and protection of immigrant workers' right to organize. Despite the existence of many labor laws, immigrant workers around the world are often mistreated (58, 88). Labor protections for immigrants are limited owing to their lack of political power, language differences affecting access to power, and, for some immigrants, fear of retaliation and potential deportation. For these reasons, it is important not only to increase enforcement of existing labor laws but also to protect the rights of immigrant workers to organize to protect themselves collectively on the job.
3. Fair immigration reform that includes a path to citizenship. Given that immigration functions as a social determinant of health, the best way to address that determinant is to reform the immigration system itself. In the United States, a fair and comprehensive policy change is necessary and should focus on a path toward citizenship and a worker permit that would not undermine workers already present nor deepen power differentials, as guest worker programs often do. These changes could significantly improve the health of immigrants and should be promoted and subsequently tracked when implemented. One significant aspect of immigration reform is the commitment to fair and more equitable economic development globally so that many people would no longer be forced to leave their homes in the first place.
4. Inclusion of immigrant communities through collaboration and participation. Public health practitioners and researchers should reconsider how the field approaches immigration and work more closely and directly with immigrant communities. Such participatory planning of public health research and responses could increase sustainability of programs and tailor programs to the needs and realities of specific immigrant communities.

CONCLUSION

Although the focus on social determinants of health is growing in public health research and practice, this understanding has not made significant headway into the field of immigration and health. Public health research on immigration and health is dominated by three primary frameworks. The most common framework focuses on individual health behaviors and neglects broader social, economic, and political forces. The second most common framework focuses on the culture of immigrants, moving beyond the level of the individual to some degree, yet still neglecting many of the larger forces affecting immigrants. And finally, the third framework focuses on social, economic, institutional, and political structures as they affect immigrant health. However, most of the research in this third framework is limited to access to health care for immigrants and

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

rarely addresses the many other ways in which such structures affect health. A structural approach requires acknowledgment of the host of social factors and forces that affect health and operate to either include or exclude individuals and communities from adequate health care as well as from resources and experiences that foster health. We suggest expanding research in this structural framework as one important way to engage in research and practice related to immigration utilizing a social determinants of health lens.

Immigration involves challenging adaptations that are more than processes of individual adjustment to new environments or cultural assimilation or acculturation to new sociocultural contexts; it is also a complex and often protracted process of negotiation with social structural, political, and economic forces. Thus, we recommend that, to make substantive improvements in health outcomes, immigration must be understood as a key social determinant of health in its own right. Immigration influences all other social relationships and is a lived experience that directly affects health and well-being. A serious consideration of immigration in this light is consistent with and advances public health as a science that examines and responds to causes of disease on a population level. Treating immigration as a social determinant of health poses challenges to conventional understandings and practices because it requires going beyond the hold of individualism and behaviorism in public health and instead requires tackling a wider sphere of upstream structural factors affecting health. These include more inclusive health care practices, engagement with immigrant communities, and advocacy for fair immigration, economic, and health policies. A concerted effort to understand the effects of immigration as a social determinant of health holds the potential to position public health as a key actor in the development of a truly healthy global society, inclusive of those compelled to cross international boundaries.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

ACKNOWLEDGMENTS

The authors thank Thomas A. Arcury, Paula Braveman, Sara A. Quandt, S. Leonard Syme, and Priscilla Young for their comments and recommendations. The authors also thank the immigrant populations with whom they have been privileged to work.

LITERATURE CITED

1. Acevedo-Garcia D, Bates LM. 2008. Latino health paradoxes: empirical evidence, explanations, future research, and implications. In *Latinas/os in the United States: Changing the Face of América*, ed. H Rodriguez, R Saenz, C Menjivar, CE Rodríguez, D Massey, pp. 101–13. New York: Springer
2. Allen B, Cisneros EM, Tellez A. 2013. The children left behind: the impact of parental deportation on mental health. *J. Child Fam. Stud.* In press. doi: 10.1007/s10826-013-9848-5
3. Almeida J, Molnar BE, Kawachi I, Subramanian SV. 2009. Ethnicity and nativity status as determinants of perceived social support: testing the concept of familism. *Soc. Sci. Med.* 68:1852–58
4. APHA (Am. Public Health Assoc.). 2009. *Border Crossing Deaths: A Public Health Crisis Along the US-Mexico Border*. Washington, DC: APHA. **http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1385**
5. APHA (Am. Public Health Assoc.). 2011. *Improving Access to Higher Education Opportunities and Legal Immigration Status for Undocumented Immigrant Youths and Young Adults*. Washington, DC: APHA. **http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1417**

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

6. APHA (Am. Public Health Assoc.). 2012. *Opposing the DHS-ICE Secure Communities Program*. Washington, DC: APHA. **http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1446**
7. Arcury TA, Quandt SA. 2007. Delivery of health services to migrant and seasonal farmworkers. *Annu. Rev. Public Health* 28:345–63
8. Arcury TA, Quandt SA. 2014. Community-based participatory research and occupational health disparities: pesticide exposure among immigrant farmworkers. In *Occupational Health Disparities Among Racial and Ethnic Minorities: Formulating Research Needs and Directions*, ed. F Leong, D Eggerth, D Chang, M Flynn, K Ford, R Martinez. Washington, DC: APA Press. In press
9. Bacallao ML, Smokowski PR. 2005. "Entre dos mundos" (between two worlds): bicultural skills training with Latino immigrant families. *J. Prim. Prev.* 26:485–509
10. Barry DT, Mizrahi TC. 2005. Guarded self-disclosure predicts psychological distress and willingness to use psychological services among East Asian immigrants in the United States. *J. Nerv. Ment. Dis.* 193(8):535–39
11. Batis C, Hernandez-Barrera L, Barquera S, River JA, Popkin BM. 2011. Food acculturation drives dietary differences among Mexicans, Mexican Americans, and Non-Hispanic Whites. *J. Nutr.* 141(10):1898–906
12. Bean FD, Leach MA, Brown SK, Bachmeier JD, Hipp JR. 2011. The educational legacy of unauthorized migration: comparisons across U.S.-immigrant groups in how parents' status affects their offspring. *Int. Migr. Rev.* 45(2):348–85
13. Berk M, Schur C, Chavez L, Frankel M. 2000. Health care use among undocumented Latino immigrants: Is free health care the main reason why Latinos come to the United States? A unique look at the facts. *Health Aff.* 19(4):51–64
14. Bhattacharya G. 2008. Acculturating Indian immigrant men in New York City: applying the social capital construct to understand their experiences and health. *J. Immigr. Minor. Health* 10:91–101
15. Bhattacharya G. 2011. Global contexts, social capital, and acculturative stress: experiences of Indian immigrant men in New York City. *J. Immigr. Minor. Health* 13:756–65
16. Biehl J. 2013. *Vita: Life in a Zone of Social Abandonment*. Berkeley: Univ. Calif. Press
17. Borjas GJ. 2003. Welfare reform, labor supply, and health insurance in the immigrant population. *J. Health Econ.* 22:933–58
18. Borrell LN, Castor D, Conway FP, Terry MB. 2006. Influence of nativity status on breast cancer risk among US black women. *J. Urban Health* 83(2):211–20
19. Bourdieu P. 1990. *The Logic of Practice*. Cambridge, UK: Polity Press
20. Bourgois P. 1988. Conjugated oppression: class and ethnicity among Guyami and Kuna banana workers. *Am. Ethnol.* 15:328–48
21. Bourgois PI, Schonberg J. 2009. *Righteous Dopefiend*. Berkeley: Univ. Calif. Press
22. Braveman P, Egerter S, Williams DR. 2011. The social determinants of health: coming of age. *Annu. Rev. Public Health* 32:381–98
23. Brown PJ, Inhorn M. 1990. Disease, ecology, and human behavior. In *Medical Anthropology: A Handbook of Theory and Method*, ed. T Johnson, C Sargent, pp. 184–214. New York: Greenwood
24. Burris S, Blankenship KM, Donoghoe M, Sherman S, Vernick JS, et al. 2004. Addressing the "risk environment" for injection drug users: the mysterious case of the missing cop. *Milbank Q.* 82:125–56
25. Bustamante AV, 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* 14:146–55
26. Campos B, Schetter CD, Abdou CM, Hobel CJ, Glynn LM, Sandman CA. 2008. Familialism, social support, and stress: positive implications for pregnant Latinas. *J. Cult. Div. Ethn. Minor. Psychol.* 14:155–62
27. Carswell K, Blackburn P, Barker C. 2011. The relationship between trauma, post-migration problems and the psychological well-being of refugees and asylum seekers. *Int. J. Soc. Psychiatry* 57:107–19
28. Castañeda H. 2012. "Over-foreignization" or "unused potential"? A critical review of migrant health in Germany and responses toward unauthorized migration. *Soc. Sci. Med.* 74(6):830–38
29. Castañeda H. 2013. Structural vulnerability and access to medical care among migrant street-based male sex workers in Germany. *Soc. Sci. Med.* 84:94–101

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

30. Chakraborty BM, Mueller WH, Reeves R, Poston WS 2nd, Holscher DM, et al. 2003. Migration history, health behaviors, and cardiovascular disease risk factors in overweight Mexican-American women. *Ethn. Dis.* 13(1):94–108
31. Choi J, Miller A, Wilbur J. 2009. Acculturation and depressive symptoms in Korean immigrant women. *J. Immigr. Minor. Health* 11:13–19
32. Coatsworth JD, Pantin H, Szapocznik J. 2002. Familias Unidas: a family-centered ecodevelopmental intervention to reduce risk for problem behavior among Hispanic adolescents. *Clin. Child Fam. Psychol. Rev.* 5(2):113–32
33. Costigan CL, Koryzma CM, Hua JM, Chance LJ. 2010. Ethnic identity, achievement, and psychological adjustment: examining risk and resilience among youth from immigrant Chinese families in Canada. *J. Cult. Div. Ethn. Minor. Psychol.* 16(2):264–73
34. Culp K, Umbarger M. 2004. Seasonal and migrant agricultural workers: a neglected work force. *AAOHN J.: Off. J. Am. Assoc. Occup. Health Nurses* 52:383–90
35. De Castro AB, Fujishiro K, Sweitzer E, Oliva J. 2006. How immigrant workers experience workplace problems: a qualitative study. *Arch. Environ. Occup. Health* 61:249–58
36. Derose KP, Bahney BW, Lurie N, Escarce JJ. 2009. Review: immigrants and health care access, quality, and cost. *Med. Care Res. Rev.* 66:355–408
37. Diez Roux AV. 2007. Integrating social and biologic factors in health research: a systems view. *Ann. Epidemiol.* 17:569–74
38. Edelman D, Christian A, Mosca L. 2009. Association of acculturation status with beliefs, barriers, and perceptions related to cardiovascular disease prevention among racial and ethnic minorities. *J. Transcult. Nurs.* 20(3):278–85
39. Farmer P. 2010. *Partner to the Poor: A Paul Farmer Reader*. Berkeley: Univ. Calif. Press
40. Farmer P, Kleinman A, Kim J, Basilico M. 2013. *Reimagining Global Health*. Berkeley: Univ. Calif. Press
41. Farmer PE, Nizeye B, Stulac S, Keshavjee S. 2006. Structural violence and clinical medicine. *PLOS Med.* 3:e449
42. Ferrie JE, Shipley MJ, Stansfeld SA, Davey Smith G, Marmot M. 2003. Future uncertainty and socioeconomic inequalities in health: the Whitehall II study. *Soc. Sci. Med.* 57:637–46
43. Galea S, Hall C, Kaplan GA. 2009. Social epidemiology and complex system dynamic modelling as applied to health behaviour and drug use research. *Int. J. Drug Policy* 20:209–16
44. Garcés IC, Scarinci IC, Harrison L. 2006. An examination of sociocultural factors associated with health and health care seeking among Latina immigrants. *J. Immigr. Minor. Health* 8(4):377–85
45. Greenberg MH, Levin-Epstein J, Hutson RQ, Ooms TJ, Schumacher R, et al. 2002. The 1996 welfare law: key elements and reauthorization issues affecting children. *Cent. Future Child.* 12:26–57
46. Grzywacz JG, Quandt SA, Chen H, Isom S, Kiang L, et al. 2010. Depressive symptoms among Latino farmworkers across the agricultural season: structural and situational influences. *J. Cult. Div. Ethn. Minor. Psychol.* 16:335–43
47. Hacker K, Chu J, Arsenault L, Marlin RP. 2013. Provider's perspectives on the impact of Immigration and Customs Enforcement (ICE) activity on immigrant health. *J. Health Care Poor Underserved* 23:651–65
48. 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.* 73:586–94
49. Hagan J, Rodriguez N, Capps R, Kabiri M. 2003. The effects of recent welfare and immigration reforms on immigrants' access to health care. *Int. Migr. Rev.* 37(2):444–63
50. Hennessy-Burt TE, Stoecklin-Marois MT, Meneses-González F, Schenker MB. 2011. A pilot binational study of health behaviors and immigration. *J. Immigr. Minor. Health* 13(6):1142–49
51. Heptinstall E, Sethna V, Taylor E. 2004. PTSD and depression in refugee children: associations with pre-migration trauma and post-migration stress. *Eur. Child Adolesc. Psychiatry* 13:373–80
52. Holmes SM. 2007. Oaxacans like to work bent over: the naturalization of social suffering among berry farm workers. *Int. Migr.* 45:39–68
53. Holmes SM. 2012. The clinical gaze in the practice of migrant health: Mexican migrants in the United States. *Soc. Sci. Med.* 74(6):873–81

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

54. Holmes SM. 2013. *Fresh Fruit, Broken Bodies: Migrant Farmworkers in the United States*. Berkeley: Univ. Calif. Press
55. Hovey JD, Magaña C. 2000. Acculturative stress, anxiety, and depression among Mexican immigrant farmworkers in the Midwest United States. *J. Immigr. Health* 2(3):119–31
56. Huang Z, Stella J, Yu M, Ledsky R. 2006. Health status and health service access and use among children in U.S. immigrant families. *Am. J. Public Health* 96(4):634–40
57. Hunt LM, Schneider S, Comer B. 2004. Should "acculturation" be a variable in health research? A critical review of research on US Hispanics. *Soc. Sci. Med.* 59:973–86
58. Jayaraman S. 2013. *Behind the Kitchen Door*. Ithaca, NY: ILR Press
59. Jones CP. 2000. Levels of racism: a theoretic framework and a gardener's tale. *Am. J. Public Health* 90:1212–15
60. Juarbe TC, Lipson JG, Turok X. 2003. Physical activity beliefs, behaviors, and cardiovascular fitness of Mexican immigrant women. *J. Transcult. Nurs.* 14(2):108–16
61. Kandula NR, Kersey M, Lurie N. 2004. Assuring the health of immigrants: what the leading health indicators tell us. *Annu. Rev. Public Health* 25:357–76
62. Kasirye OC, Walsh JA, Romano PS, Beckett LA, Garcia JA, et al. 2005. Acculturation and its association with health-risk behaviors in a rural Latina population. *Ethn. Dis.* 15:733–39
63. Kawachi I, Kennedy BP. 1999. Income inequality and health: pathways and mechanisms. *Health Serv. Res.* 34:215–27
64. Kim G, Jang Y, Chiriboga DA, Ma GX, Schonfeld L. 2010. Factors associated with mental health service use in Latino and Asian immigrant elders. *Aging Ment. Health* 14(5):535–42
65. Krieger N. 1994. Epidemiology and the web of causation: Has anyone seen the spider? *Soc. Sci. Med.* 39(7):887–903
66. Krieger N. 1999. Embodying inequality: a review of concepts, measures, and methods for studying health consequences of discrimination. *Int. J. Health Serv.* 29(2):295–352
67. Krieger N. 2001. Theories for social epidemiology in the 21st century: an eco social perspective. *Int. J. Epidemiol.* 30(4):668–77
68. Krieger N. 2003. Does racism harm health? Did child abuse exist before 1962? On explicit questions, critical science, and current controversies: an ecosocial perspective. *Am. J. Public Health* 93:194–99
69. Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DE. 2005. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu. Rev. Public Health* 26:367–97
70. Leake AR, Bermudo VC, Jacob J, Jacob MR, Inouye J. 2012. Health is wealth: methods to improve attendance in a lifestyle intervention for a largely immigrant Filipino-American sample. *J. Immigr. Minor. Health* 14(3):475–80
71. Lillie-Blanton M, Laveist T. 1996. Race/ethnicity, the social environment, and health. *Soc. Sci. Med.* 43:83–91
72. Lindert J, Ehrenstein OS von, Priebe S, Mielck A, Brähler E. 2009. Depression and anxiety in labor migrants and refugees—a systematic review and meta-analysis. *Soc. Sci. Med.* 69(2):246–57
73. Link BG, Phelan J. 1995. Social conditions as fundamental causes of disease. *J. Health Soc. Behav. Spec.* 35:80–94
74. Link BG, Phelan JC. 1996. Understanding sociodemographic differences in health: the role of fundamental social causes. *Am. J. Public Health* 86(4):471–72
75. Link BG, Phelan JC. 2002. McKeown and the idea that social conditions are fundamental causes of disease. *Am. J. Public Health* 92:730–32
76. Liu J, Probst JC, Harun N, Bennett KJ, Torres ME. 2009. Acculturation, physical activity, and obesity among Hispanic adolescents. *Ethn. Health* 14(5):509–25
77. Lurie IZ. 2008. Welfare reform and the decline in the health-insurance coverage of children of non-permanent residents. *J. Health Econ.* 27(3):786–93
78. Marmot M. 2005. Social determinants of health inequalities. *Lancet* 365(9464):1099–104
79. Marmot M, Shipley MJ, Rose G. 1984. Inequalities in death-specific explanations of a general pattern. *Lancet* 1(8384):1003–6

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

80. Marmot M, Wilkinson RG. 2006. *Social Determinants of Health*. Oxford, UK: Oxford Univ. Press
81. Marrow HB. 2012. Deserving to a point: unauthorized immigrants in San Francisco's universal access healthcare model. *Soc. Sci. Med.* 74(6):846–54
82. Martinez O, Wu E, Sandfort T, Dodge B, Carballo-Dieguez A, et al. 2013. Evaluating the impact of immigration policies on health status among undocumented immigrants: a systematic review. *J. Immigr. Minor. Health*. In press. doi: 10.1007/s10903-013-9968-4
83. Mayo RM, Erwin DO, Spitler HD. 2003. Implications for breast and cervical cancer control for Latinas in the rural South: a review of the literature. *Cancer Control* 10(5 Suppl.):60–68
84. McArthur LH, Anguiano R, Gross KH. 2004. Are household factors putting immigrant Hispanic children at risk of becoming overweight: a community-based study in eastern North Carolina. *J. Community Health* 29(5):387–404
85. McGuire S, Martin K. 2007. Fractured migrant families: paradoxes of hope and devastation. *Fam. Community Health* 30(3):178–88
86. McKinlay JB, Marceau LD. 2000. Upstream healthy public policy: lessons from the battle of tobacco. *Int. J. Health Serv.* 30(1):49–69
87. Miller M, Neaigus A. 2001. Networks, resources, and risk among women who use drugs. *Soc. Sci. Med.* 52(6):967–78
88. Minkler M, Salvatore AL, Chang C, Gaydos M, Liu SS, et al. 2014. Wage theft as a neglected public health problem: an overview and case study from San Francisco's Chinatown District. *Am. J. Public Health* 104:1010–20
89. Minnis AM, Doherty I, vanDommelen-Gonzalez E, Cheng H, Otero-Sabogal R, Padian NS. 2010. Immigration and sexual partner risk among Latino adolescents in San Francisco. *J. Immigr. Minor. Health* 12(6):900–8
90. Moua M, Guerra FA, Moore JD, Valdiserri RO. 2002. Immigrant health: legal tools/legal barriers. *J. Med. Ethics* 30:189–96
91. Moynihan B, Gaboury MT, Onken KJ. 2008. Undocumented and unprotected immigrant women and children in harm's way. *J. Forensic Nurs.* 4(3):123–29
92. Muñoz FA, Servin AE, Garfein RS, Ojeda VD, Rangel G, Zúñiga ML. 2013. Deportation history among HIV-positive Latinos in two US-Mexico border communities. *J. Immigr. Minor. Health*. In press. doi: 10.1007/s10903-013-9929-y
93. NACCHO (Natl. Assoc. County City Health Off.). 2013. *Statement of Policy: The Health of Documented and Undocumented Immigrants*. No. 99-02. Washington, DC: NACCHO. **http://www.naccho.org/advocacy/positions/upload/99-02-Health-of-Documented-and-Undocumented-Immigrants.pdf**
94. Navarro V. 2004. *The Political and Social Contexts of Health*. Amityville, NY: Baywood
95. Navarro V, Muntaner C. 2004. *Political and Economic Determinants of Population Health and Well-Being: Controversies and Developments*. Amityville, NY: Baywood
96. NILC (Natl. Immigr. Law Cent.). 2011. *Overview of Immigrant Eligibility for Federal Programs*. Los Angeles, CA: NILC. **http://www.nilc.org/table_ovrw_fedprogs.html**
97. Ortega AN, Fang H, Perez VH, Rizzo JA, Carter-Pokras O, et al. 2007. Health care access, use of services, and experiences among undocumented Mexicans and other Latinos. *Arch. Intern. Med.* 167(21):2354–60
98. Ortega AN, Horwitz SM, Fang H, Kuo AA, Wallace SP, Inkelas M. 2009. Documentation status and parental concerns about development in young US children of Mexican origin. *Acad. Pediatr.* 9(4):278–82
99. Pantin H, Coatsworth JD, Feaster DJ, Newman FL, Briones E, et al. 2003. Familias Unidas: the efficacy of an intervention to promote parental investment in Hispanic immigrant families. *Prev. Sci.* 4(3):189–201
100. Pasick RJ, Burke NJ. 2008. A critical review of theory in breast cancer screening promotion across cultures. *Annu. Rev. Public Health* 29:351–68
101. Peek MK, Cutchin MP, Salinas JJ, Sheffield KM, Eschbach K, et al. 2010. Allostatic load among non-Hispanic Whites, non-Hispanic Blacks, and people of Mexican origin: effects of ethnicity, nativity, and acculturation. *Am. J. Public Health* 100(5):940–46
102. Pew Hisp. Cent. 2005. *The New Latino South: The Context and Consequences of Rapid Population Growth*. Washington, DC: Pew Hisp. Cent. **http://www.pewhispanic.org/files/reports/50.pdf**
103. Phelan JC, Link BG, Tehranifar P. 2010. Social conditions as fundamental causes of health inequalities: theory, evidence, and policy implications. *J. Health Soc. Behav.* 51:S28–40

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

104. Pilver CE, Kasl S, Desai R, Levy BR. 2011. Exposure to American culture is associated with premenstrual dysphoric disorder among ethnic minority women. *J. Affect. Dis.* 130(1):334–41
105. Poundstone KE, Strathdee SA, Celentano DD. 2004. The social epidemiology of human immunodeficiency virus/acquired immunodeficiency syndrome. *Epidemiol. Rev.* 26(1):22–35
106. Pourat P, Wallace SP, Hadler MW, Ponce N. 2014. Assessing health care services used by California's undocumented immigrant population. *Health Aff.* 33(5):840–47
107. Poureslami IM, Rootman I, Balka E, Devarakonda R, Hatch J, Fitzgerald JM. 2007. A systematic review of asthma and health literacy: a cultural-ethnic perspective in Canada. *MedGenMed.* 219(3):40
108. Quesada J. 2009. The vicissitudes of structural violence: Nicaragua at the turn of the 21st century. In *Global Health in Times of Violence*, ed. B Rylko-Bauer, L Whiteford, P Farmer, pp. 157–80. Santa Fe, NM: Sch. Adv. Res.
109. Quesada J. 2011. No soy welferero: undocumented Latino laborers in the cross-hairs of legitimation maneuvers. *Med. Anthropol.* 30(4):386–408
110. Quesada J, Arreola S, Kral A, Khoury S, Organista KC, Worby P. 2014. "As good as it gets": undocumented Latino day laborers negotiating discrimination in San Francisco and Berkeley, California, USA. *City Soc.* 26(1):29–50
111. Quesada J, Hart LK, Bourgois P. 2011. Structural vulnerability and health: Latino migrant laborers in the United States. *Med. Anthropol.* 30(4):339–62
112. Redfield P. 2013. *Life in Crisis: The Ethical Journey of Doctors Without Borders*. Berkeley: Univ. Calif. Press
113. Rhodes T. 2009. Risk environments and drug harms: a social science for harm reduction approach. *Int. J. Drug Policy* 20(3):193–292
114. Rhodes T, Simic M. 2005. Transition and the HIV risk environment. *BMJ* 331:220–23
115. Richard L, Potvin L, Mansi O. 1998. The ecological approach in health promotion programmes: the views of health promotion workers in Canada. *Health Educ. J.* 57(2):160
116. Robertson AM, Lozada R, Pollini RA, Rangel G, Ojeda VD. 2012. Correlates and contexts of US injection drug initiation among undocumented Mexican migrant men who were deported from the United States. *AIDS Behav.* 16(6):1670–80
117. Rousseau C, Hassan G, Moreau N, Thombs BD. 2011. Perceived discrimination and its association with psychological distress among newly arrived immigrants before and after September 11, 2001. *Am. J. Public Health* 101(5):909–15
118. Salehi R. 2010. Intersection of health, immigration, and youth: a systematic literature review. *J. Immigr. Minor. Health* 12(5):788–97
119. Sargent C. 2012. "Deservingness" and the politics of health care. *Soc. Sci. Med.* 74(6):855–57
120. Seicean S, Neuhauser D, Strohl K, Redline S. 2011. An exploration of differences in sleep characteristics between Mexico-born US immigrants and other Americans to address the Hispanic paradox. *Sleep* 34(8):1021–31
121. Singer M. 2001. Toward a bio-cultural and political economic integration of alcohol, tobacco, and drug studies in the coming century. *Soc. Sci. Med.* 53(2):199–213
122. Small L, Melnyk BM, Anderson-Gifford D, Hampl JS. 2009. Exploring the meaning of excess child weight and health: shared viewpoints of Mexican parents of preschool children. *Pediatr. Nurs.* 35(6):357–66
123. Smedley BD, Stith AY, Nelson AR, eds. 2003. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: Natl. Acad. Press
124. Sommers BD. 2013. Stuck between health and immigration reform—care for undocumented immigrants. *N. Engl. J. Med.* 369(7):593–95
125. Strathdee SA, Hallett TB, Bobrova N, Rhodes T, Booth R, et al. 2010. HIV and risk environment for injecting drug users: the past, present, and future. *Lancet* 376(9737):268–84
126. Suárez-Orozco C, Todorova IL, Louie J. 2002. Making up for lost time: the experience of separation and reunification among immigrant families. *Fam. Process* 41(4):625–43
127. Sullivan MM, Rehm R. 2005. Mental health of undocumented Mexican immigrants: a review of the literature. *Adv. Nurs. Sci.* 28(3):240–51
128. Susser M. 1996. Choosing a future for epidemiology II: from black box to Chinese boxes and eco-epidemiology. *Am. J. Public Health* 86(5):674–77

129. Sweat MD, Denison JA. 1995. Reducing HIV incidence in developing countries with structural and environmental interventions. *AIDS* 9:S251–57
130. Tsai JHC, Salazar MK. 2007. Occupational hazards and risks faced by Chinese immigrant restaurant workers. *Fam. Community Health* 30:S71–79
131. Valdez CR, Padilla B, Valentine JL. 2013. Consequences of Arizona's immigration policy on social capital among Mexican mothers with unauthorized immigration status. *Hisp. J. Behav. Sci.* 35(3):303–22
132. Vasquez EP, Gonzalez-Guarda RM, De Santis JP. 2011. Acculturation, depression, self-esteem, and substance abuse among Hispanic men. *Issues Ment. Health Nurs.* 32(2):90–97
133. Viladrich A. 2012. Beyond welfare reform: reframing undocumented immigrants' entitlement to health care in the United States, a critical review. *Soc. Sci. Med.* 74(6):822–29
134. Villarejo D. 2003. The health of U.S. hired farm workers. *Annu. Rev. Public Health* 24:175–93
135. Viruell-Fuentes EA. 2007. Beyond acculturation: immigration, discrimination, and health research among Mexicans in the United States. *Soc. Sci. Med.* 65(7):1524–35
136. 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
137. Waldstein A. 2010. Popular medicine and self-care in a Mexican migrant community: toward an explanation of an epidemiological paradox. *Med. Anthropol.* 29(1):71–107
138. Ward LS. 2010. Farmworkers at risk: the costs of family separation. *J. Immigr. Minor. Health* 12(5):672–77
139. Weber L, Parra-Medina D. 2003. Intersectionality and women's health: charting a path to eliminating health disparities. *Adv. Gend. Res.* 7:181–230
140. Wexler LM, DiFluvio G, Burke TK. 2008. Resilience and marginalized youth: making a case for personal and collective meaning-making as part of resilience research in public health. *Soc. Sci. Med.* 69(4):565–70
141. WHO (World Health Organ.) 2014. *Migrant health*. WHO, Geneva. **http://www.who.int/hac/techguidance/health_of_migrants/en/**
142. Wiggins M. 2009. Farm labor and the struggle for justice in the eastern United States fields. In *Latino Farmworkers in the Eastern United States: Health, Safety, and Justice*, ed. TA Arcury, SA Quandt, pp. 201–20. New York: Springer
143. Willen SS. 2012. How is health-related "deservingness" reckoned? Perspectives from unauthorized im/migrants in Tel Aviv. *Soc. Sci. Med.* 74(6):812–21
144. Williams DR. 1999. Race, socioeconomic status, and health: the added effects of racism and discrimination. *Ann. N.Y. Acad. Sci.* 896:173–88
145. Wilson EK. 2008. Acculturation and changes in the likelihood of pregnancy and feelings about pregnancy among women of Mexican origin. *Women Health* 47(1):45–64
146. Wu TY, West B, Chen YW, Hergert C. 2006. Health beliefs and practices related to breast cancer screening in Filipino, Chinese and Asian-Indian women. *Cancer Detect. Prev.* 30(1):58–66
147. Yarris K, Castañeda H. 2014. Ethnographic insights on displacement, migration, and deservingness in contemporary global contexts. *Int. Migr.* In press
148. Yip T, Gee GC, Takeuchi DT. 2008. Racial discrimination and psychological distress: the impact of ethnic identity and age among immigrant and United States-born Asian adults. *Dev. Psychol.* 44(3):787–800
149. Yoshikawa H, Godfrey EB, Rivera AC. 2008. Access to institutional resources as a measure of social exclusion: relations with family process and cognitive development in the context of immigration. *New Dir. Child Adolesc. Dev.* 2008(121):63–86
150. Zimmerman C, Kiss L, Hossain M. 2011. Migration and health: a framework for 21st century policy-making. *PLOS Med.* 8(5):e1001034

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Annual Review of Public Health

Volume 36, 2015

Contents

Symposium: Strategies to Prevent Gun Violence

Commentary: Evidence to Guide Gun Violence Prevention in America
Daniel W. Webster 1

The Epidemiology of Firearm Violence in the Twenty-First Century United States
Garen J. Wintemute 5

Effects of Policies Designed to Keep Firearms from High-Risk Individuals
Daniel W. Webster and Garen J. Wintemute 21

Cure Violence: A Public Health Model to Reduce Gun Violence
Jeffrey A. Butts, Caterina Gouvis Roman, Lindsay Bostwick, and Jeremy R. Porter 39

Focused Deterrence and the Prevention of Violent Gun Injuries: Practice, Theoretical Principles, and Scientific Evidence
Anthony A. Braga and David L. Weisburd 55

Epidemiology and Biostatistics

Has Epidemiology Become Infatuated With Methods? A Historical Perspective on the Place of Methods During the Classical (1945–1965) Phase of Epidemiology
Alfredo Morabia 69

Statistical Foundations for Model-Based Adjustments
Sander Greenland and Neil Pearce 89

The Elusiveness of Population-Wide High Blood Pressure Control
Paul K. Whelton 109

The Epidemiology of Firearm Violence in the Twenty-First Century United States
Garen J. Wintemute 5

Focused Deterrence and the Prevention of Violent Gun Injuries: Practice, Theoretical Principles, and Scientific Evidence
Anthony A. Braga and David L. Weisburd 55

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Unintentional Home Injuries Across the Life Span: Problems and Solutions
Andrea C. Gielen, Eileen M. McDonald, and Wendy Shields 231

Sleep as a Potential Fundamental Contributor to Disparities in Cardiovascular Health
Chandra L. Jackson, Susan Redline, and Karen M. Emmons 417

Translating Evidence into Population Health Improvement: Strategies and Barriers
Steven H. Woolf, Jason Q. Purnell, Sarah M. Simon, Emily B. Zimmerman, Gabriela J. Camberos, Amber Haley, and Robert P. Fields 463

Environmental and Occupational Health

Fitness of the US Workforce
Nicolaas P. Pronk 131

Food System Policy, Public Health, and Human Rights in the United States
Kerry L. Shannon, Brent F. Kim, Shawn E. McKenzie, and Robert S. Lawrence 151

Regulating Chemicals: Law, Science, and the Unbearable Burdens of Regulation
Ellen K. Silbergeld, Daniele Mandrioli, and Carl F. Cranor 175

The Haves, the Have-Nots, and the Health of Everyone: The Relationship Between Social Inequality and Environmental Quality
Lara Cushing, Rachel Morello-Frosch, Madeline Wander, and Manuel Pastor 193

The Impact of Toxins on the Developing Brain
Bruce P. Lanphear 211

Unintentional Home Injuries Across the Life Span: Problems and Solutions
Andrea C. Gielen, Eileen M. McDonald, and Wendy Shields 231

Public Health Practice

Cross-Sector Partnerships and Public Health: Challenges and Opportunities for Addressing Obesity and Noncommunicable Diseases Through Engagement with the Private Sector
Lee M. Johnston and Diane T. Finegood 255

Deciphering the Imperative: Translating Public Health Quality Improvement into Organizational Performance Management Gains
Leslie M. Beitsch, Valerie A. Yeager, and John Moran 273

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Identifying the Effects of Environmental and Policy Change Interventions on Healthy Eating
Deborah J. Bowen, Wendy E. Barrington, and Shirley A.A. Beresford 289

Lessons from Complex Interventions to Improve Health
Penelope Hawe 307

Trade Policy and Public Health
Sharon Friel, Libby Hattersley, and Ruth Townsend 325

Uses of Electronic Health Records for Public Health Surveillance to Advance Public Health
Guthrie S. Birkhead, Michael Klompas, and Nirav R. Shah 345

What Is Health Resilience and How Can We Build It?
Katharine Wulff, Darrin Donato, and Nicole Lurie 361

Effects of Policies Designed to Keep Firearms from High-Risk Individuals
Daniel W. Webster and Garen J. Wintemute 21

Cure Violence: A Public Health Model to Reduce Gun Violence
Jeffrey A. Butts, Caterina Gouvis Roman, Lindsay Bostwick, and Jeremy R. Porter 39

Focused Deterrence and the Prevention of Violent Gun Injuries: Practice, Theoretical Principles, and Scientific Evidence
Anthony A. Braga and David L. Weisburd 55

Regulating Chemicals: Law, Science, and the Unbearable Burdens of Regulation
Ellen K. Silbergeld, Daniele Mandrioli, and Carl F. Cranor 175

The Response of the US Centers for Disease Control and Prevention to the Obesity Epidemic
William H. Dietz 575

Social Environment and Behavior

Immigration as a Social Determinant of Health
Heide Castañeda, Seth M. Holmes, Daniel S. Madrigal, Maria-Elena DeTrinidad Young, Naomi Beyeler, and James Quesada 375

Mobile Text Messaging for Health: A Systematic Review of Reviews
Amanda K. Hall, Heather Cole-Lewis, and Jay M. Bernhardt 393

Sleep as a Potential Fundamental Contributor to Disparities in Cardiovascular Health
Chandra L. Jackson, Susan Redline, and Karen M. Emmons 417

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

Stress and Type 2 Diabetes: A Review of How Stress Contributes to the Development of Type 2 Diabetes
Shona J. Kelly and Mubarak Ismail 441

Translating Evidence into Population Health Improvement: Strategies and Barriers
Steven H. Woolf, Jason Q. Purnell, Sarah M. Simon, Emily B. Zimmerman, Gabriela J. Camberos, Amber Haley, and Robert P. Fields 463

Using New Technologies to Improve the Prevention and Management of Chronic Conditions in Populations
Brian Oldenburg, C. Barr Taylor, Adrienne O'Neil, Fiona Cocker, and Linda D. Cameron 483

Commentary: Evidence to Guide Gun Violence Prevention in America
Daniel W. Webster 1

The Haves, the Have-Nots, and the Health of Everyone: The Relationship Between Social Inequality and Environmental Quality
Lara Cushing, Rachel Morello-Frosch, Madeline Wander, and Manuel Pastor 193

Cross-Sector Partnerships and Public Health: Challenges and Opportunities for Addressing Obesity and Noncommunicable Diseases Through Engagement with the Private Sector
Lee M. Johnston and Diane T. Finegood 255

Lessons from Complex Interventions to Improve Health
Penelope Hawe 307

What Is Health Resilience and How Can We Build It?
Katharine Wulff, Darrin Donato, and Nicole Lurie 361

Health Services

Assessing and Changing Organizational Social Contexts for Effective Mental Health Services
Charles Glisson and Nathaniel J. Williams 507

Policy Dilemmas in Latino Health Care and Implementation of the Affordable Care Act
Alexander N. Ortega, Hector P. Rodriguez, and Arturo Vargas Bustamante 525

Tax-Exempt Hospitals and Community Benefit: New Directions in Policy and Practice
Daniel B. Rubin, Simone R. Singh, and Gary J. Young 545

The Prescription Opioid and Heroin Crisis: A Public Health Approach to an Epidemic of Addiction
Andrew Kolodny, David T. Courtwright, Catherine S. Hwang, Peter Kreiner, John L. Eadie, Thomas W. Clark, and G. Caleb Alexander 559

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.

The Response of the US Centers for Disease Control and Prevention to the Obesity Epidemic
William H. Dietz 575

Mobile Text Messaging for Health: A Systematic Review of Reviews
Amanda K. Hall, Heather Cole-Lewis, and Jay M. Bernhardt 393

Using New Technologies to Improve the Prevention and Management of Chronic Conditions in Populations
Brian Oldenburg, C. Barr Taylor, Adrienne O'Neil, Fiona Cocker, and Linda D. Cameron 483

Indexes

Cumulative Index of Contributing Authors, Volumes 27–36 597

Cumulative Index of Article Titles, Volumes 27–36 603

Errata

An online log of corrections to *Annual Review of Public Health* articles may be found at http://www.annualreviews.org/errata/publhealth

Annu. Rev. Public Health 2015.36:375-392. Downloaded from www.annualreviews.org
Access provided by University of California - Berkeley on 04/21/16. For personal use only.