

I. Introduction

A. Nature of the research problem.

The association between caretaker nativity and child health access is an understudied research area. Because children depend upon adults to use health care, it is plausible to expect that reports of children's health and access to health care also may depend upon the immigration characteristics of their parent caretakers. The very few reports related to health and access to health care for children of immigrants examine the immigrant generation of the parent-child dyad, rather than examine the independent association between caretaker nativity and child health access. We lack research that describes the independent contribution of caretaker nativity to child health and access to care. Moreover, the majority of these few reports lack national representation; limit the studied sample by income, ethnicity, or region of U.S. residence; are not population-based; and present a limited range of health access outcomes. Particularly lacking are studies that examine preventive care use, the appropriateness of preventive care use, and barriers to care, as well as whether or not racial and ethnic disparities exist among children of immigrants. This line of research is important in order to advance the literature, to identify which children of immigrants are most vulnerable to worse health and access to health care outcomes, and in order to inform program and policy efforts designed to improve health and reduce access barriers for children of immigrants. In other words, in order to be relevant and generalizable, health related research among children in the United States now must account for indicators of nativity and immigration among the children and their caretakers.

B. Purpose, scope, and methods of the investigation.

This purpose of this research project was to advance knowledge regarding the association between parental immigration characteristics and children's health and access to health care. Indicators of both potential and realized health care access were examined. Key to this research project was examination of the association between caretaker nativity and these child health access outcomes. In particular, we were interested in knowing whether or not caretaker nativity was associated with children health and access to care, independently of citizenship among children and parents and parental duration of U.S. residence. Sub-group analyses were performed in order to examine whether or not effects of caretaker nativity varied by children's race and ethnicity. The specific aims of the proposed study are to: 1) Analyze the independent association between caretaker nativity and access to health care among children in the United States, and 2) Analyze and compare the association between caretaker nativity and access to health care among children in the United States who are of different racial, ethnic, and national origins.

C. Nature of the findings.

Overall, our results indicate an independent effect of parental nativity to children's health and health services use—regardless of the child's immigrant generation and the mother's citizenship and duration of U.S. residence. Unexpectedly, health and health services use outcomes for children with one U.S. and one foreign-born parent were similar to or better than those for children with only U.S.-born parents. Parental citizenship and duration of U.S. residence accounted for the effect of parental nativity for only one outcome—the location of a site of care among children with a place to go (however, these immigration factors are not associated with whether or not a child has a place to go for care). Moreover, the effect of

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parental nativity depends upon a child's race and ethnicity. Worse health and health services use outcomes were observed for children who are racial and ethnic minorities, compared to their counterparts with U.S.-born parents; however, white children with immigrant parents have similar or improved outcomes compared to white children with native-born parents. In other words, among children with at least one foreign-born parent, those with *only* foreign-born parents and who are racial and ethnic minorities are most vulnerable to worse health status and health services use—regardless of the citizenship and duration of U.S. residence of their parents. These results challenge the extant literature, and support that for access to care and health status, the immigrant generation of the child is subordinate to the nativity of the parents.

Program and policy efforts to improve health and access to care for children of immigrants should focus on children with only foreign-born parents and those who lack citizenship—these are the most vulnerable children of immigrants. Children with at least one U.S.-born parent are least vulnerable among all U.S. children.

II. Review of the Literature

Current estimates place the number of children of immigrants at 20% of the U.S. child population. Although children with at least one foreign-born parent are categorized as children of immigrants, most (>75%) of these children are U.S. citizens. Moreover, population projections reveal that by 2050, approximately 50% of all U.S. children will have at least one foreign-born parent. Despite these future projections of the impact of this segment of the U.S.'s child population, we know little about factors associated with health status and access to health care for them. The majority of this limited literature examines child health and access to care by immigrant generation or the child's ethnicity, rather than by the immigration characteristics of parents. The reports examining ethnicity are tightly focused on Latino and Asian children, and consistently reveal less favorable access indicators, as compared to white children. These findings have persisted despite adjustment for citizenship, insurance, and health status. Similarly, health access reports among children of immigrants, by immigrant generation, consistently reveal less favorable indicators of health access, as compared to children of natives. In general, 1st generation children have the most unfavorable health access profiles—a trend that persists after accounting for differential health insurance coverage. Although they represent important advancements in knowledge, these investigations lack needed examination of the independent contribution of parental nativity to child health and access to care.

III. Study Design and Methods

A. Study design.

This research project is a secondary data analysis of a nationally representative data set—the 2002 National Survey of America's Families (NSAF). The NSAF is well-suited for testing our hypotheses, because currently it is the only publicly available, nationally-representative dataset containing a wide range of child health and access outcomes along with indicators of immigration for parents and children. The NSAF was developed to provide information on social and economic characteristics of children in low income families. The NSAF has a complex sampling design, and includes nationally representative samples of households with and *without* telephones. Households without telephones (i.e., families living in households without land-line telephones) were identified using a probability area sample of non-telephone households in block groups identified by their high percentage of families lacking a telephone.

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Excluded were those homeless, and those in “linguistically isolated” households (1-2% of the total)—in which no one spoke English or Spanish. The household response rate was 66% . The weighted NSAF represents the civilian, non-institutionalized U.S. population under age 65 years. Moreover, the weighting class adjustment method used in the NSAF accounts for unit non-response, and therefore minimizes bias due to non-response. In households with children, up to two children—one under age 6 years and one 6 - 17 years—were randomly sampled (n = 34,332 children). Children in the NSAF are representative of the approximately 72 million children under 18 years of age in the U.S., and of nearly 11 million children with at least one foreign-born parent (i.e., children of immigrants). The adult most knowledgeable (MKA) about the sampled child’s health, education, and well-being served as proxy respondents. Most (89%) of the sampled children live with their biological parents.

B. Population studied.

Our analyses focused on understanding how parental immigration characteristics were associated with children’s health and health services use. In order to advance the literature, we were particularly interested in understanding whether or not parental nativity was independently associated with children’s health outcomes, after accounting for citizenship and nativity among children and parents, as well as after accounting for indicators of acculturation among parents. Therefore, among all children in the U.S., we were interested in understanding whether outcomes for both foreign- and U.S.-born children varied with the immigration characteristics of parents, or solely varied with the immigration characteristics of children.

C. Sample selection.

See section IIIA, above.

D. Instruments used.

See section IIIA, above

E. Statistical techniques employed.

The *primary characteristic of interest*—parental nativity—indicates whether or not the child’s parent(s) are U.S. citizens by birth. Parental nativity was reference-cell coded to permit comparisons among those with: a) foreign-born parents or b) one parent foreign-born and the other U.S.-born (i.e., mixed-nativity), and c) U.S.-born parents (the largest group). Children living with a single parent (e.g., as a result of divorce or separation) were assigned to either the first or last category based on the place of birth of the parent with which they live. *Other characteristics* related to family and child immigration include the mothers’ and the children’s citizenship, the number of years that the mother has been in the U.S., whether the survey was completed in English or Spanish, and the child’s nativity. U.S. citizens include citizens by birth and those naturalized; however, the data do not identify documentation status for non-citizens. The few children born abroad to U.S. citizens (n = 34) were coded as U.S.-born citizens. The remaining covariates operationalized key enabling resources and predisposing factors from the Behavioral Model for Vulnerable Populations, and that have been widely used in previous research. Univariate, bivariate, and multivariate analyses were performed. Most child health and health services use outcomes were dichotomous. For these outcomes, multiple logistic regression analysis was used. For ordinal outcomes, multinomial logistic regression was used.

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The following two key statistical challenges were encountered: 1) multicollinearity (i.e., a correlation coefficient ≥ 0.80) among the immigration characteristics under examination, and 2) the need to distinguish whether or not outcomes differed *among* children with foreign-born parents, rather than only as compared to children with U.S. born parents. We found the following covariate pairs to be multicollinear: parental nativity with mother's citizenship and with the number of years in the U.S., and the child's nativity with his/her citizenship. In most cases, multicollinear pairs resulted in unstable or non-significant ($P > 0.05$) odds ratios. We addressed multicollinearity by examining full models retaining only parental nativity, and then also examining models using a variable created by combining parental nativity with either mother's citizenship, children's citizenship, or mothers' duration of U.S. residence. For example, "parental nativity-mother's citizenship" was coded as foreign-born parents-non-citizen mother or foreign-born parents-naturalized citizen mother compared to U.S.-born parents. To address the second challenge, we performed Wald tests of results from children in families with only foreign-born parents.

All covariates were entered simultaneously into each multivariate model. Probability and replicate weights available in the NSAF were used to account for the complex survey design and within-family clustering of sampled children. Variance estimation therefore was performed using a standard jackknife-2 method.

IV. Detailed Findings

Our **analyses investigate** the association between parental nativity and several child health and access to health services outcomes. We had two key research questions: 1) Is parental nativity independently associated with child health and access to health care after adjusting for other indicators of immigration among parents and children, as well as factors generally known to be associated with health services use, and 2) do effects of parental nativity vary with a child's race and ethnicity. We were not able to examine a third question of interest—does the effect of parental nativity on child health outcomes vary with the child's country of origin—because this information is publicly available from the Urban Institute in insufficient detail (i.e., beyond large world region groups).

The **outcomes examined** include perceived general child health, presence of a usual site for health care, the type of site used for usual care, the presence of a usual source for health care, whether or not the child has visited a physician in the past year, whether or not the child has had a well care visit in the past year, the appropriateness of the number of preventive care visits in the past year, health related satisfaction among immigrant parents, and unmet medical-dental-medication health needs.

Initial Findings

Overall, 14% of U.S. children have only foreign-born parents; 5% have one foreign- and one U.S.-born parent (i.e., "mixed-nativity") (1, 2). Overall, and compared to children with only U.S.-born parents, children with only foreign-born parents were most vulnerable to worse health, access to care, and health services use, whereas outcomes for children with mixed-nativity among parents were similar to or improved compared to the reference group. Compared to children with only U.S.-born parents, those with only foreign-born parents had worse health and health use outcomes—being 70% less likely to have excellent or very good health (OR = 0.30; 0.26-0.34), 78% less likely to have a usual site for health care (OR = 0.22; 0.58-1.20), 61% less likely to have a usual source (OR = 0.39; 0.34-0.44), 52% less likely to have had a physician visit

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in the past year (OR = 0.48; 0.43-0.54), and 26% less likely to have had an annual well child care visit (OR = 0.74; 0.65-0.84). In contrast, children with mixed-nativity parents were similar to children with U.S.-born parents on all of these outcomes except for well child care visits—which they were 21% more likely to have had (OR = 1.21; 1.01-1.46).

After adjustment, the effect of parental nativity persisted only for perceived general child health [only foreign-born parents: OR = 0.68; 0.56-0.82; mixed-nativity parents: OR = 1.29; 1.07-1.58] and for the presence of a usual site for health care [OR = 0.52; 0.38-0.69]. Moreover, after stratifying by children's race and ethnicity, the effect of parental nativity persisted for Hispanic and non-Hispanic minority—but not white—children. However, worse health services use outcomes were reported for children lacking U.S. citizenship, regardless of their race and ethnicity. Further analyses to test the robustness of our results to multicollinearity among immigration characteristics revealed: 1) no effect of the child's nativity on health and access to care, 2) no effect of mother citizenship on the child health and access outcomes, and 3) equivocal results for mother's duration of U.S. residence—whether or not an effect of mother's duration of U.S. residence was observed on children's health status depended upon the cut-point used to determine health status.

Subsequent Findings

Subsequent analyses examined the type of site of care used by children, the appropriateness of preventive health care use, and parental satisfaction with health care received by their families. Because our initial analyses revealed similar and improved health outcomes among children in mixed-nativity families, as compared to children with U.S.-born parents—a finding indicating a protective effect of the presence of at least one U.S.-born parent, these subsequent analyses examined children with only foreign-born parents in comparison to those with at least one U.S.-born parent.

First, the **type of health care site used by children** was observed to vary with parental citizenship and duration of U.S. residence; however, whether or not a child had a usual site for care varied with parental nativity, rather than parents' citizenship or duration of U.S. residence or children's citizenship (3, 4). After adjusting for confounders, using multinomial logistic regression, both citizen [OR = 1.92 (1.44–2.56)] and noncitizen [OR = 5.21 (3.33–8.15)] children with foreign-born parents were more likely to lack a usual site for health care, compared to children with at least one US-born parent. Similar results were observed regardless of mothers citizenship (children with only foreign-born parents were 2 – 3 times more likely to lack a usual site for health care) and regardless of mothers' duration of U.S. residence (children with only foreign-born parents were 2 – 3 times more likely to lack a usual site for care regardless of mothers duration of U.S. residence). However, after accounting for parental nativity, lack of citizenship and shorter durations of US stay among mothers were associated with children's greater use of public clinics or other hospital outpatient settings (57 – 71% more likely), rather than physician's offices or HMOs. Moreover, the effect of parental nativity persisted for minority, but not white, children; however, non-citizen children lacked a usual site for health care regardless of their race and ethnicity.

Second, we also examined whether or not parental immigration characteristics were associated with whether or not children had received an **appropriate number of annual preventive health care visits**. For this analysis we used a subset (n = 21,340) of children 3 years of age and older in the National Survey of America's Families, for whom a determination of an appropriate number of visits could be obtained (5). Over one-third (36%) of sampled

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children lacked the number of preventive health care visits recommended annually by the American Academy of Pediatrics. In multivariate logistic regression analyses, children with only foreign-born parents were 23% less likely [OR = 0.77 (0.61 – 0.97)] to have had an appropriate number of preventive health care visits than were children with at least one U.S.-born parent. Wald tests revealed that this association persisted despite accounting for children’s and mothers’ citizenship, as well as mothers’ duration of U.S. residence.

Finally, we examined the association between parental nativity and parental **satisfaction with health care received** by their families (6). Most parents were very (55%) or somewhat (35%) satisfied with the quality of medical care received by their families. Bivariate logistic regression analysis revealed that respondents in families with only foreign-born parents were 33% less likely to be very satisfied with their medical care (OR = 0.67; 0.58 – 0.73) than were respondents in families with at least one U.S.-born parent. After adjusting for children’s health need, enabling resources, and family predisposing factors—including mothers’ citizenship and length of stay, and children’s citizenship—multivariate logistic regression analysis revealed that only mothers’ citizenship as *naturalized* retained association with lower medical satisfaction (OR = 0.51; 0.40 – 0.65). Control covariates retaining an association with lower parental medical satisfaction included poor health, lack of health insurance coverage, and lack of a usual source for health care for children, as well as completion of high school, rather than college, among mothers. In other words, immigrant parents are not less satisfied than are native-born parents with the quality of health care received by their families. These results bring into question commonly held beliefs regarding the determinants of family health-related satisfaction, and highlight the importance of potential—rather than realized—access barriers for immigrant families.

Other analyses and findings

We also were interested in understanding whether or not **unmet needs for health care** were associated with parental nativity. Exploratory analysis revealed these outcomes to be of low prevalence among children overall. Moreover, exploratory analyses revealed a lack of association between parental nativity and unmet needs for medical care, dental care, and prescription medications among children. Because of the low prevalence of these outcomes in the 2002 NSAF, we attempted to combine all three years of the NSAF in order to have a large enough sample size (and therefore increased) to examine these outcomes. Major design changes in the NSAF between years precluded use of this approach.

V. Discussion and Interpretation of Findings

A. Conclusions to be drawn from findings.

Results from these analyses are initial documentation in the U.S. of the relationships under study, advance and challenge current knowledge, and fill important gaps in the health services research literature for children of immigrants. The following five key findings characterize our results: 1) the importance of parental nativity to children’s health and access to care—regardless of children’s immigrant generation, parental citizenship, and parental duration of U.S. residence, 2) the effect of parental nativity varies with immigrant parent structure, such that heightened vulnerability to worse health and access to care is observed for children with only foreign-born—rather than at least one U.S.-born—parent, 3) the contribution of minority race and ethnicity to heightened vulnerability to worse health and access to care among children

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of immigrants, 4) lack of citizenship confers vulnerability to worse access to care for children regardless of their race and ethnicity, and 5) the likely greater importance to children's access to health care of biomedical, rather than only social, acculturation among parents.

These results challenge prior research indicating the primary importance of children's immigrant generation and of parental citizenship to children's health status and access to care. Because these prior studies did not account either for parental nativity independently (i.e., separately) from parents' citizenship, or for variation in family parental immigration structure: 1) differences between parents who are naturalized versus native-born U.S. citizens were missed, and 2) improved child health outcomes among families with one U.S.-born and one foreign-born parent were missed. Moreover, because prior studies did not account either for parental nativity independently (i.e., separately) from children's nativity, or for children's citizenship independently from their nativity, prior results obscured similarity in vulnerability for both U.S.-born and foreign-born children living in immigrant families.

These results also support the likely greater importance of *bio-medical*—rather than social—acculturation to health and access to care for children in immigrant families. The lack of association between the child health outcomes examined and parental citizenship and duration of U.S. residence provide the strongest evidence for this conclusion. For example, children with only foreign-born parents lacked a usual site for health care regardless of mothers' citizenship or duration of U.S.-residence (an often used indicator of social acculturation).

B. Explanation of study limitations.

Potential limitations vary depending on the outcomes assessed; however, key limitations across these analyses result from the use of cross-sectional data; the outcomes and key covariates chosen; and the survey procedures for respondents with limited English proficiency.

First, we recognize the inability to infer causal effects with cross-sectional data is fundamental to inferential statistics; however, because nativity is an immutable characteristic preceding immigration, we can be confident of the direction of the association between parental nativity and many of these child health outcomes. This is an important distinction, as factors associated with whether or not foreign-born parents obtain citizenship or decide to remain in the U.S. may be endogenous to these child health outcomes. By determining that the nativity of parents, an immutable characteristic, is important to perceived child health independently of the child's nativity or the mother's citizenship, we can more confidently state that among children of immigrants, children with foreign-born parents (i.e., no U.S.-born parent) are most vulnerable. Similarly, because parental nativity is an immutable characteristic that precedes the selection of a usual site for health care, we can be confident of the direction of this association (i.e., a usual site for health care cannot lead to parental nativity). Similarly, a mother's citizenship may influence the health care site used by a child; however, it is not possible to derive citizenship from whether or not a child has a usual place for health care. Although a child's usual site for health care could affect a parent's decision to remain in the U.S., we observed a lack of association between these two variables; therefore, we can be confident of the underlying population association. We cannot, however, infer a causal effect of mother's length of stay in the U.S. on where children of immigrants usually go for health care.

Second, our use of a subjective and global measure of child health does not comprehensively reflect other domains of health and functioning, and may be sensitive to different interpretations of health; however, this definition has been widely used. Also, prior studies have not differentiated families by parental nativity; therefore, our knowledge has

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remained limited regarding factors associated with even this global outcome for children with foreign-born parents. Moreover, because the goal of this study was to understand factors associated with how immigrant parents assess their child's health, perceived general health status was an appropriate outcome for this study. These results, therefore, are an important first step towards understanding the importance of the independent role of parental nativity for child health outcomes.

Third, the inability to distinguish documentation status among non-citizens—a heterogeneous group of documented and undocumented immigrants—limits the generalization of our results to this overall category of non-citizen immigrants. Fourth, a decrease in the validity and reliability of selected outcomes could have resulted from survey procedures for administering the questionnaire to respondents who speak a language other than English or Spanish. For example, cultural factors may influence perceptions of health status. The direction of such bias would vary by cultural group; however, bias is likely lessened for the remaining outcomes because of their more objective nature. Because nearly all of our results remained consistent despite using fair-poor perceived child health as the reference category, an effect of this bias is likely limited. Similarly, the language in which the respondent took the survey is not an ideal proxy for English proficiency. A person may decline taking a survey in English but may use English effectively for their health needs. Lack of publicly available information in the NSAF to identify respondents requiring interpretation to complete the interview limits inferences or further analyses for this group.

Finally, the majority of children with foreign-born parents are of Hispanic ethnicity, and so results are relevant largely to this population; however, a sizeable number of minority children (nearly ¼) belong to other groups. Stratification by race and ethnicity were steps taken to examine associations for non-Hispanic children of immigrants.

More comprehensive examination of differences in health outcomes between children of immigrants and natives will require new nationally-representative datasets with sufficient samples of immigrants for analysis, as well as more detailed indicators of family migration and health outcomes. Despite real and potential limitations, however, our results advance knowledge regarding the importance of parental nativity and children's race and ethnicity to perceived health and access to care for children of immigrants in the U.S.

C. Comparison with findings of other studies.

Our results support findings from other studies indicating increased vulnerability to worse general health and access to care for children of immigrants, especially when they lack U.S. citizenship. However, our results differ in three important ways. First, prior studies include as vulnerable children with at least one foreign-born parent. Our results indicate that among U.S. children, those with only foreign-born—rather than at least one foreign-born parent—are most vulnerable. In other words, vulnerability for children of immigrants is *reduced* when at least one parent is *U.S.-born*—indicating that having at least one U.S.-born parent appears to be protective. Second, prior studies did not separately analyze naturalized citizens from U.S.-born citizens, therefore concluding that all children with citizen parents (regardless of the parents' nativity) had improved outcomes, compared to children with non-citizen parents. Our results challenge these prior results, and indicate that children with naturalized citizen and non-citizen parents appear to be more similar to each other, in access to care, than are they are to children with native-born parents. Third, our results indicate that for health status and access to care, the immigrant

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generation of the child is likely subordinate to the parent's nativity and children's citizenship. These three key results are important distinctions, and have policy and program implications.

D. Possible application of findings to actual MCH health care delivery situations.

Overall, our results suggest that vulnerability among children of immigrants is more closely linked to the family immigration structure of parents and to lack of citizenship among children, rather than to the immigrant generation of the child or the citizenship and duration of residence of their parents. Efforts by clinicians, health program planners, and health policy developers to improve access to health care for children of immigrants should: 1) focus on children with only foreign-born parents, 2) consider the heightened vulnerability of minority children with foreign- compared to U.S.-born parents, 3) focus outreach and educational interventions to families with foreign-born parents regardless of their or their children's citizenship, and 4) include efforts to measure and increase foreign-born parents' "bio-medical acculturation", regardless of their citizenship. For example, a potentially useful clinical intervention is the development and implementation of a tool that can be used to assess the level of bio-medical acculturation among immigrant parents, regardless of their citizenship and duration of U.S. residence. Among those with reduced biomedical acculturation, outreach and educational intervention can be instituted. Alternatively, advocacy for inclusion into the process of obtaining legal permanent residence and citizenship of information related to the U.S. health system structure and expectations regarding preventive and routine health maintenance standards also may be useful. However, additional efforts—such as reducing citizenship-linked barriers to insurance coverage—are needed to reduce barriers for non-citizen children.

E. Policy implications.

In addition to the recommendations in section D, above, these research findings indicate the need to shift long-held conceptualizations regarding which children of immigrants are most vulnerable, the determinants of vulnerability among children of immigrants, and the basis upon which we define vulnerability among children of immigrants for resource allocation.

Currently, children of immigrants are defined as those children having at least one foreign-born parent. Moreover, children of immigrants generally are described, as a group, to be more vulnerable than children with native-born parents. However, our results indicate that children with at least one foreign-born parent are not homogeneous with regards to health-related vulnerability. Our findings challenge this long-held belief, and indicate that among children in the U.S., those children with only foreign-born parents are most vulnerable—regardless either of the child's nativity as U.S. or foreign-born or of parents' citizenship and duration of U.S. residence. Children with one U.S.- and one foreign-born parent are least vulnerable among U.S. children—regardless of the child's nativity as U.S. or foreign-born. Therefore, a more useful approach to policy formation, resource allocation, and program planning may be to categorize children of immigrants according to *family nativity structures indicating vulnerability*, rather than simply using a cut-point of any foreign birth among parents. This approach responds to new knowledge indicating that the presence of even one U.S.-born caretaker is protective. Using this approach (i.e., categorization of children by the vulnerability associated with the immigration structure of their caretakers), "*children in immigrant families*" would be used to describe children who have only foreign-born caretakers, "*children in mixed-nativity families*" would describe children who have one U.S.- and one foreign-born caretaker, and "*children in native-born families*" would describe children who have no foreign-born caretakers. Because

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this categorization is linked to nativity at the family—rather than individual—level, it would not interfere with traditionally used categorizations of immigrants at the individual level (i.e., by immigrant generation).

Moreover, program and policy planners should recognize that children with foreign-born parents and who are racial and ethnic minorities have heightened vulnerability as compared to their racial and ethnic counterparts with native-born parents. Health and social policies directed to improving outcomes for children of immigrants should be most effective if directed to children with only foreign-born parents, those who can be categorized as racial and ethnic minorities, and those lacking U.S. citizenship (regardless of their racial and ethnic category).

Finally, because both foreign- and U.S.-born children living with foreign-born parents are most vulnerable, programs to improve children of immigrants' health and potential to use health services should be directed towards improving *biomedical acculturation* and reducing access barriers for their parents—regardless of parental citizenship and duration of U.S. residence or the child's nativity as U.S- or foreign-born.

F. Suggestions for further research

Future health services research for children of immigrants should account for the independent effect of parental nativity to study outcomes. Failure to examine the independent contribution of parental nativity to children's health outcomes can result in incorrectly ascribing observed effects to children's immigrant generation or parents' citizenship and duration of U.S. residence. Future research also should directly examine biomedical acculturation among immigrant parents, and whether or not—as well as the extent to which—outcomes for children vary with the level of parental biomedical acculturation. Future investigations need to account for potential variation in health outcomes for children of immigrants by their race and ethnicity. Failure to do so can lead to concluding, incorrectly, that recommended program and policy changes will be equally successful for or are equally required by all children with foreign-born parents. Future health services research for children of immigrants should examine the processes through which migration and immigrant parents' perceptions of their children's health and health care needs may influence access to care. Finally, future research should examine whether or not differences exist in child health outcomes by the immigration categories of non-citizens who are legal permanent residents.

VI. List of products (peer reviewed articles, books, chapters in books, master and doctoral dissertations, conference presentations, etc.).

1. Weathers A, Novak S, Sastry N, Norton EC. Parental nativity affects children's health and access to care. *Journal of Immigrant and Minority Health* online first (Nov 2007); <http://www.springerlink.com/content/1557-1912>.
2. Weathers A, Norton EC, Sastry N, Sonnenfeld N. The Role of Caretaker Migration in Health and Access to Care for Children of Immigrants: Findings from the National Survey of America's Families. In: 2006 Pediatric Academic Societies; 2006; San Francisco California [2914.449]; 2006.
3. Weathers A, Sastry N, Novak S, Norton EC. Parental nativity is an important factor associated with where children usually go for health care. *Maternal and Child Health Journal* 2007;online October 2007: <http://www.springerlink.com/content/20t15t61g38r5828/>.

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4. Weathers A, Novak S, Sastry N, Norton EC. The Immigration Characteristics of Parents Affect Children's Access to Care: Findings from the National Survey of America's Families. In: Pediatric Academic Societies (Abstract #: 750173; Publication #: 6308.3) 2007; Toronto, Canada; 2007.
5. Weathers A, Sastry N, Novak S, Norton EC. Parental Nativity Affects Children's Receipt of Recommended Numbers of Preventive Health Care Visits: findings from the National Survey of America's Families. Pediatrics 2007;Under Review.
6. Weathers A, Sastry N, Novak S, Norton EC. Health -care satisfaction among immigrant and U.S.-born parents: findings from the National Survey of America's Families. 2007;Under Revision.