HEALTH, WELL-BEING, AND SOCIAL CONTEXT OF SAMOAN MIGRANT POPULATIONS

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A minimal estimate suggests 300,000 Samoans reside outside the Samoan archipelago in the United States, New Zealand, and Australia. Anthropological studies of Samoan migration provide a broader perspective that emphasizes the deep connections among individuals and families residing in and outside the Samoas, and the adaptive nature of these connections. A review of the published socioeconomic, demographic, public health, and medical literatures indicates that Samoans residing outside the Samoas may be at high risk for poor levels of population health because of poverty, low health literacy, and sociocultural influences on health care knowledge, attitude, and access. There is little systematic information on Samoans in the United States and Australia. Based on trends from smaller studies and the national data from New Zealand, we recommend more population-based health research among Samoans. Studies of representative samples will provide more accurate assessments of the spectrum of social and economic characteristics, acculturative processes, the returns and costs of connectedness to the families and villages in the Samoas, and population health characteristics. Studies should emphasize not only the negative costs to health and well-being of migration but the processes of adjustment, accommodation, and adaptation that produce the varieties of ways of life among Samoans outside the Samoas. Keywords: Samoans, health, well-being, remittances, migration, adaptation

Samoans from the independent nation of Samoa, formerly Western Samoa, and the U.S. territory of American Samoa have been departing their villages on the several islands of the archipelago for over 150 years when contact with the naval and commercial ships from European nations became regular callers in the waters off Apia and Pago Pago (Davidson 1967; Keesing 1934). The purpose of this report is to provide a concise summary of what is known about Samoans residing outside the archipelago with an emphasis on their health and well-being. First we describe the current population sizes of Samoans in the major nations with Samoan communities, including the United States, New Zealand, and Australia. We discuss migration as a demographic entity and the more nuanced view of migration and connectedness to family and village in the Samoas. Then we summarize the socioeconomic conditions of these Samoans, depending on available information from the census and more detailed community and household studies. Thirdly, we describe a range of measures of well-being of these populations including reports on youth and

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domestic violence, family functioning, food insecurity, and mental health measures. Last, we report on biobehavioral risk factors such as cigarette smoking, alcohol consumption, the well-studied patterns of overweight and obesity and their associated conditions type 2 diabetes, hypertension, and cancer.

We attempt to present this information within an adaptive framework so that the population health measures are seen as originating primarily from the social, economic, political, and demographic contexts of these groups. An important theme is the culturally contextual view of the demographic fact of migration and how this view defines the migration, transnational and ethnic minority experiences as part of a fluid adaptive set of strategies, which maintain family and community connections (Liki 2001; Lilomaiava-Doktor 2009). The evidence will show that Samoans outside the Samoas are diverse but that as a whole group, they are characterized by low levels of population health and well-being. At the end we attempt informed speculation about structural and individual interventions.

ESTIMATES OF THE POPULATION SIZES OF SAMOAN MIGRANTS

There was most likely a trickle emigration of Samoans from the mid-1800s until the aftermath of the early 20th century political and military events. These events led to the political separation of the archipelago into what became known as Western Samoa and American Samoa, followed less than 20 years after by the loss of Western Samoa by Germany after World War I, and its administration by New Zealand (Davidson 1967). These events made possible more substantial flows to New Zealand from Samoa and to the United States from American Samoa. Nonetheless before the 1960s and 1970s it is almost impossible to estimate the numbers or proportions of Samoan emigrants, their return to the Samoas, or their population size within the several industrial nations with Samoan or Polynesian communities. For the purposes of this report we will not describe the growth over time of the Samoan populations residing outside the Samoas but provide the most recent population size estimates.

Samoans from American Samoa and Samoa have been migrating to the United States, principally Hawai'i and the west coast states but the largest emigration took place in the early 1950s with the closing of the U.S. Navy base in American Samoa (Pirie 1970). The 2000 U.S. Census showed that within the 50 states, that is, excluding American Samoa, there were 132,911 people of self-reported Samoans ethnicity, 15.2 percent of all Pacific Islanders (U.S. Census 2001). The states with the largest Samoan populations included California (37,498), Hawai'i (16,166), Washington (8,049), Utah (4,523), Texas (2,491), and Alaska (1,670). In Hawai'i the 16,166 Samoans are 1.3 percent of the 1.2 million Hawai'i residents, but 28,184 (2.3 percent) indicated Samoan as their race either alone or in combination with other ethnicities (Hawai'i Department of Business, Economic Development and Tourism 2008). In the public school system in Hawai'i, approximately 3.5 percent of the students are of Samoan ancestry (Hawai'i Department of Education 2008).

Samoans from (Western) Samoa have been immigrating to New Zealand since the early 20th century. An annual quota of immigrants from Samoa was instituted with the Treaty of Friendship based on intended and available residence and occupation (Cribb 1999).

In New Zealand the 2001 and 2006 census figures listed residents born in either Samoa or American Samoa, respectively, as follows: the 2001 census: 47,118 and 399; the 2006 census: 50,649 and 489 (Misatauveve n.d.). In the 2006 census, 131,103 people indicated Samoan as one of the ethnic groups with which they identified (Paterson et al. 2008).

The latest Australian census in 2006 recorded 15,240 people born in Samoa, an increase of 13.9 per cent from the 2001 Census (Australian Department of Immigration and Citizenship n.d.). In 2006, an estimated 39,992 Australians claim Samoan or part Samoan as their ancestry. This is an overestimate of the number of individual people with Samoan ancestry because of the ability for census respondents to choose more than one ethnic ancestry (Australian Department of Immigration and Citizenship n.d.).

Based on the above estimates from the United States, New Zealand, and Australia the number of ethnic Samoans residing outside of the archipelago is large, approximately 300,000 people. Over time and especially during the last two decades of the 20th century and first decade of the 21st century, the size of the Samoan populations outside the two Samoan polities has grown because of natural increase of Samoans within those three nations, as well as emigration.

SOCIAL AND ECONOMIC FACTORS

It is very difficult to obtain socioeconomic information from representative surveys of Samoan communities outside of the Samoas. In the United States, the classification of ethnicity by most states and the United States as a whole results in Samoans being combined in categories such as Asian American and Pacific Islander (AAPI), or Pacific Islander, or Other. This makes it impossible to provide estimates of the level of unemployment, employment, distribution of occupations, income and many other key socioeconomic descriptors. In addition the absence of any community-based surveys targeted at Samoans in the United States in recent years makes even guesswork of such factors suspect. New Zealand national statistics for all Pacific Islanders reported that unemployment, for those 15 years and older, rose from 6.1 percent in 1987 to 28.85 in 1992, fell to 6.3 percent in 2006, followed by an increase to 8.5 percent in March 2009 (New Zealand Ministry of Social Development 2009). These are not Samoan specific estimates but may be used a rough guide to Samoan unemployment in New Zealand. Publicly available Australian national figures on unemployment are not available for Samoan ethnicity or anything similar such as Pacific Islander. In the absence of quality evidence about employment, occupation, home ownership, and other indicators, we prefer to conclude that not enough is known to summarize about the socioeconomic position of Samoans away from Samoa. Smaller studies focused on other social and health factors, and older studies certainly suggest relatively high unemployment, low levels of professional occupations, and a general low level of socioeconomic status (Fitzgerald and Howard 1990; Franco 1991; Graves and Graves 1985; Hanna and Baker 1979; Janes 1990a, 1990b; MacPherson 1978).

Despite the evidence of the stressors among Samoan communities outside the Samoas, it is crucial to describe the findings by Janes (1990b) that community and extended family networks are very important. These one-on-one and network relationships provide

key support by physical assistance, donations, and involvement in church/community activities. Thus, the theme of social connectedness with family and home in the Samoas is found also among Samoans residing away from the Samoas.

Another understudied topic is selective emigration from the Samoas by social and economic factors. Understanding both the current social and economic situation of Samoan communities in the United States, New Zealand, and Australia and how they are formed by nonrandom emigration of individuals and families, social mobility within the larger nations and even the phenomenon of return migration is necessary for an accurate description. Much of the published literature is fragmentary and based on smaller focused studies. Although some smaller studies suggest differences in biomedical and sociodemographic characteristics these are quite dated and may not be relevant now for contemporary Samoan communities away from the archipelago (Hanna et al. 1990; Pearson and Hanna 1989).

One migration topic receiving attention has been the usual sociodemographic concern about the emigration from the Samoas of professional and skilled labor, sometimes called the 'brain drain', with special concern for health professionals. Pacific island countries including Samoa experience emigration by nurses and physicians because of perceived and real increases in income, wealth, working conditions, autonomy, and the presence of family (Brown and Connell 2004). One study estimated that there are more health professionals born in Pacific nations working in Australia and New Zealand than in the respective source populations, and that there are over 75 percent more Samoan doctors and 150 percent more nurses living and working in Australia and New Zealand than there are in Samoa (Negin 2008).

The interpretation of this type of selective emigration by trained professional workers has been debated for Samoans in particular (Liki 2001). As opposed to a simple depiction of the "brain drain" as negative for the source population, it can be seen as part of the patterns of geographic mobility while remaining closely connected to family and communities of origin, which are intertwined through strongly shared values, and reinforced through visits, remittances and other social and instrumental support. A deeper critique of the concept of the atomized individual and the implications of geographic mobility for such single actors highlights the importance of the extended family network to Samoans, and suggests that, although individuals (the Euro-American concept of individual) have moved away from the homeland, they are still rooted within the context of the family (Liki 2001; Lilomaiava-Doktor 2009). Liki writes

> the Samoan professional is not an individual who, as commonly perceived and interpreted, merely embodies capital and knowledge. Nor is he or she just an individual with the label 'skilled migrant' assigned by census experts, migration scholars, social scientists and politicians. Rather, the skilled Samoan is fundamentally part of a collectivity, one part of the *'aiga* and one part of the community of origin. [2001:76–77]

Interdisciplinary views about Samoan migration and its sociodemographic causes and consequences such as those described above must be considered. But as we attempt to describe the current state of knowledge about the influence of migration on

well-being and health, we will rely on descriptions and categories that do not assess the full heterogeneous nature of Samoans residing outside the Samoas and the culturally contextualized daily, lived-life meaning of being away from the archipelago. Perhaps it is possible to gain a more accurate perspective on these issues by interpreting the role of remittances and visits from relatives as manifestations of this "rootedness" (Liki 2001), and their mediating influence on health and well-being.

MIGRANT REMITTANCES

It is important to describe migrant remittances because those residing outside the Samoas are part of a geographically dispersed community of Samoans, and act in most cases as still potentially vital members of their extended families, *'aiga,* and their villages. Thus, the amounts of money and goods transferred from migrants to the Samoas are material evidence of connectedness, financial returns to the source families for the premigration investments in the migrants, and financial and social investments by the migrants for future ownership, access to family resources and social benefits associated with the gifts (Connell and Brown 2005). More specifically from the view of the effect on migrants of their remitting money and goods, sending substantial amounts of resources to their families in the Samoa may affect their ability to save funds for the various costs of living, or building their own social capital, such as the costs of education, health care, home ownership, and consumer purchases. This process may affect migrants' population health and well-being.

The consensus data about remittances of cash, goods, and commodities for Samoa, as for most other Pacific nations, indicates that substantial amounts of money are transferred privately to Samoa. From 1997 to 2002 approximately $40–$50 million annually was transferred to independent Samoa (Connell and Brown 2005). A recent IMF report estimates that these amounts increased for Samoa in 2003–05 from $74.1 million to $97.7 million to $106.2 million (Browne and Minishima 2007). In 2005, over 25 percent of the GDP of Samoa was estimated to stem from remittances from migrants residing overseas (Browne and Minishima 2007). These estimates underestimate the cash gifts given personally, that is, not bank or other wire transfers, as well as the value of the goods and commodities remitted. It is difficult to estimate the amount of money remitted to American Samoa given its status as a U.S. territory. The 2000 census of American Samoa found that six percent (583/9349) of households reported receiving remittances totaling $1,579,900 in 1999, with an average annual amount of $2,715 per recipient household (U.S. Census Bureau 2001).

If we assume that there are 300,000 Samoans residing outside the Samoas based on the above estimates, and they remit approximately $100 million annually (based on a rounding off of the Samoa 2005 estimate and American Samoa 1999 estimate) then the annual per capita remittance for migrants, including minors, is $360. For a family size of five people the annual remittances would be ~$1,800. It is hard to provide a sense of confidence around this estimate, but it is likely a minimum figure given the likely underreporting of the amount received by respondents in the Samoas

(Browne and Minishima 2007). Apart from studies of remittances by Samoan health professionals residing in Australia nothing is known about the amounts, types, and duration of remittances (Connell and Brown 2005). There may be reasons to hypothesize that as the size of the Samoan populations outside the Samoas grows because of natural increase of Samoans born in the United States, New Zealand, and Australia, and Samoans born and raised outside the Samoas become adults that the amounts and per capita level of remittances may decrease (Connell and Brown 2005). Clearly more studies are needed to understand the patterns of amount and types of migrant remittances in the second decade of the 21st century.

SOCIAL AND MENTAL HEALTH AND WELL-BEING

There have been more studies in recent years on social health and indicators of general well-being with relevance for Samoans residing outside the Samoas. Most studies use census ethnic categories that include Samoans such as AAPI, so it is not possible to be definitive about their findings for Samoans. Some studies focus on crime rates, youth violence, partner, or domestic violence within the context of poverty, low employment, acculturation, and the presumed difficulties in accommodating to life in the United States, New Zealand, and Australia.

Youth Delinquency and Violence

Lai (2009) reviewed and summarized a variety of reports on AAPI youth violence using internet-accessible technical reports, peer-reviewed papers, and meeting presentations published from 2001 to 2008. Although no concrete information exists for Samoan youth in the United States, she cites several sources that indicate that Pacific Islanders, for example, Samoans and Tongans, as well as Southeast Asians, have higher arrest rates in San Francisco and Oakland, California and on O'ahu, Hawai'i. Lai concludes that although most research on AAPI youth violence has been among Asian ethnic groups in the United States, high levels of gang involvement and arrests among juveniles are found in Hawai'i, California, Washington, and Utah (Lai 2009). She also cites evidence for Pacific Islander youth being confronted with community violence, racism, unmet mental health burdens, and illegal substance use and abuse as likely related to these indicators of poor youth well-being. She ends with a call for much more research on the etiology of youth violence and delinquency by specific ethnicity and social context (Lai 2009). Nothing definitive can be concluded about Samoan youth given the research methods used for categorizing ethnicity. Newer work should focus on specific ethnic groups, obviously including Samoans, or perhaps single studies on Samoans, in order to more fully understand and address these issues of youth social health and well-being.

Fiaui and Hishinuma (2009) place Samoan youth in Hawai'i in the context of unmet aspirations for educational and occupational opportunities, as well as the language barrier, and contend they face strong negative stereotypes in schools, such as they are only successful in athletics and not in academics. The authors argue that these stereotypes,

accompanied by a lack of encouragement from teachers who misunderstand Samoan culture, are detrimental to the youth, the Samoan society in general, and the future of the people. Samoan students in Hawai'i had a higher suspension rate, propensity for alcohol and marijuana use, and self-reported rate of "attacking others" than do Samoan students in American Samoa (Fiaui and Hishinuma 2009). Furthermore, students in American Samoa reported higher levels of what the authors call "protective-factors," for example, social attachment, low exposure to violence, importance of religion, sense of belonging, than did Samoans in Hawai'i. In female students especially, low levels of violence are associated with both high scholastic aspirations and low levels of negative parental discipline. The authors suggest that a consideration of these risk- and protective-factors be made during the development of intervention programs in both Hawai'i and American Samoa, with perhaps a focus on issues like substance use, parental discipline, and ethnic connectivity, (Fiaui and Hishinuma 2009).

A recent article reviews theories of delinquency and their application to Samoan youth outside of the Samoas (Godinet and Vakalahi 2009). This is a much needed more culturally specific and contextualized view of the physical neighborhoods, social communities, families and individuals out of which health, including social and behavioral health are produced. They agree that even the limited, low quality information, prone to reporting errors and prejudicial bias from police and civil service employees in the United States, indicates that delinquency and educational problems are major problems among Samoan youth. They also report that involvement in formal and informal Samoan community activities may provide some protection because it maintains and strengthens cultural connectedness and all the forms of social, instrumental, and affective support. On the other hand this may make more difficult youth engagement with non-Samoan communities and acculturative processes associated with educational, occupational, and social success (Godinet and Vakalahi 2009). They also call for more research and interventions that take into account the variety of Samoan-specific patterns of accommodation to the larger non-Samoan population. In particular detailed understanding is needed of the age and maturity related patterns by gender, the heterogeneous role of the 'aiga and the multiple influences of church membership.

Intimate Partner Violence (IPV)

IPV has also been associated with Pacific Islander communities in the United States, New Zealand, and Australia. There have been the usual scholarly debates about the levels of domestic or intimate partner violence among Samoans, the role of a hierarchical social organization within extended families, the association with the stressors of modern ways of life, changes in sex roles and behaviors, relationships to intended pregnancies and whether levels are now being more reported and discussed as opposed to a real increase (Cribb 1999; Crichton-Hill 2001; Gao et al. 2007; Magnussen et al. 2008). Studies of such sensitive and stigmatizing events require a more intensive understanding of the cultural context socioeconomic conditions. They mandate in-depth qualitative study of carefully chosen participants that represent the entire spectrum of society. Despite the obvious difficulties and ethical issues these future

studies should include abused partners and perpetrators (not necessarily the couple itself).

In an insightful study Magnussen and colleagues (2008) conducted two repeat focus groups about intimate partner violence with eight Samoan women at a Community Health Center in Honolulu to examine cultural perceptions, awareness, responses, and recommended actions. They had resided in the United States from four to seven years, most had graduated from high school, and all but one was employed, with all but one of their male spouses unemployed. Salient results for our purposes were the recognition that intimate partner violence occurs; that living conditions in communities away from the Samoas may increase its occurrence through several mechanisms, including changes in sex roles with increased opportunities for education and occupation for women combined with decreased opportunities for men; absence of extended family buffering and social support, which may exacerbate partner differences; some intensification of the male dominant role with immersion in Western culture, and the likely role of alcohol use (Magnussen et al. 2008). The women stated that interventions are always possible, including calling the police, but that the absence of local family and village supports makes it more difficult. Using the ministers or others with traditional authority may also be possible.

The Pacific Islands Family Study has focused on intimate partner violence among several ethnic groups in New Zealand (Paterson et al. 2007a; Paterson et al. 2007b; Schluter et al. 2007; Gao et al. 2008). Mothers of children born in a defined period were interviewed using a structured questionnaire about conflicts with their male partner. Samoan mothers were less likely than all other ethnic groups to report being either a victim or a perpetrator of severe partner violence (Paterson et al. 2007b).

Finally, Chrichton-Hill reminds us that "Samoan culture exists in its various forms in Samoa, migrant Samoan culture in New Zealand, and the culture of New Zealand-born Samoans" (2001:204). Of course this by extension pertains to Samoan communities in Australia and the United States, as well as in American Samoa. The cultural and etiologic context around partner violence may be changing with acculturation, legal policies, and preventive services. It is important to contextualize all our data and interpretations, especially about sensitive and difficult to study topics such as partner violence.

Stress and Health

Although migrants generally experience an improvement in material well-being, moving into a new and different cultural space can be a stressful and potentially harmful process. Janes, in an authoritative ethnography of Samoans in urban California, explores some of the stresses of migration and acculturation:

> Life on the mainland aggravates a social-structural paradox, in which to maintain one's status as a contributing member of the community, an individual must have access to the American economy. To remain a part of the church, to achieve status in the family, to be, in fact, a Samoan, takes money . . . a great number of people . . . struggle for that delicate balance between family subsistence and participation in Samoan affairs. Often they do not find it. [1990b:118]

Janes (1990b) emphasizes the influence of the social sphere, arguing that individual sources of stress cannot be thought of as isolated from economic patterns, political climate, or historical context. Hanna (1998) emphasizes that urinary catecholamine levels indicative of elevated stress have complex associations with family connectedness. He found that Samoan women in Hawai'i may be required to help negotiate access to new non-Samoan social services, while still being required to meet family needs (Hanna 1998). This role expansion, employment with non-Samoans and the changing of gender-associated tasks and responsibilities are likely associated with higher levels of physiological stress.

This brief review of several topics related to social health and well-being among Samoans outside the Samoas indicates that little is known in systematic surveys because of the difficulties of using national or state level data without recording of Samoan ethnicity. We are hard pressed to suggest broad generalizations let alone policy implications with such a small evidence base. The several focused studies of youth delinquency, intimate partner violence, and older studies of stress indicate that ethnic minority status, poverty, and lack of opportunities paint a picture of neighborhoods and families with high levels of stressful life events and low levels of well-being. However, without adequate representative study samples we may be missing the full spectrum of difficulty, accommodation and success among Samoans outside their native villages.

NONCOMMUNICABLE AND INFECTIOUS DISEASES

The presumed difficult living conditions of most Samoans residing outside the Samoas indicates that they may be characterized by noteworthy population health inequalities. In this section we summarize studies of noncommunicable diseases such as obesity, diabetes, and cardiovascular disease, and infectious diseases, mostly tuberculosis. Adult Samoans have been characterized with high levels of overweight and obesity and type 2 diabetes, and hypertension based on earlier studies from the 1970s and 1980s in Hawai'i and California (Hanna and Baker 1979; McGarvey and Baker 1979; McGarvey and Schendel 1986; Pawson 1986; Pawson and Janes 1981). A recent small survey of Samoan women 18–28 years in Hawai'i found that 22 percent were overweight and 58 percent were obese, and that BMI, waist circumference, and lipid and glucose levels indicate elevated CVD risk (Novotny et al. 2007). Children and adolescents residing outside the Samoas and studied in the 1970s have also been described as having high levels of overweight (Bindon and Zansky 1986; Keighley et al. 2007). A large study in Hawai'i of children one–five years of age in 1997–98 and participating in the Hawai'i Special Supplemental Nutrition Program for Women, Infants, and Children, found that among Samoans 12–23 months old and 24–59 months, 17.5 percent and 27 percent, respectively, were overweight (Baruffi et al. 2004).

Several surveys of CVD risk factors in New Zealand focused on Pacific Islanders and the expected higher levels of risk factors. The New Zealand multicultural workforce survey estimated a ten-year risk of cardiovascular disease based on blood glucose and lipid levels, smoking, leisure time physical activity, blood pressure, and BMI (Schaaf et al. 2000). Among men, 40–65 years of age of Samoan, Cook Islands, Tongan, and Niuean

ethnicities, the ten-year risk ranged from 11.5 percent to 13.2 percent. Among women, Samoan and Cook Island participants had significantly higher ten-year cardiovascular risk scores (5.7 percent) than the women from other ethnic groups (Schaaf et al. 2000). The Diabetes Heart and Health Survey (DHAH) was a cross-sectional population-based CVD risk survey in Auckland in 2002–03, focused on the same ethnic groups as the workforce survey (Sundborn et al. 2008). Levels of CVD risk among Pacific men and women were higher than Europeans, and Samoans had the highest estimated overall risk. In men diabetes prevalence by glucose tolerance test was highest in Samoans: 26.2 percent. The study suggests that screening for risk factors is efficient based on only 20–25 percent proportion of the diabetes found with the glucose tolerance test having been previously undiagnosed (Sundborn et al. 2008). Cancer rates are likely to be elevated for Samoans based on increased longevity, high BMI levels, and lack of health care access. A study using two cancer surveillance programs, the University of Southern California Cancer Surveillance Program and the Hawai'i Tumor Registry, provided cancer incidence data (Mishra et al. 1996). In Hawai'i, Samoans compared to native Hawaiians had higher age-adjusted site-specific relative risk for cancers of the nasopharynx (esp. males), liver, prostate, thyroid, and blood (esp. females) and a lower relative risk for cancers of the colon, rectum (esp. males), lung (esp. females), and breast. Most of these site-specific rates were also higher for Samoans in Hawai'i compared with those of European descent. In California there were similar cancer patterns between Samoans and European derived people (Mishra et al. 1996). A cancer needs study in Hawai'i of several ethnic groups found that most Samoan women received cancer screening such as mammograms and Pap tests at church-based mobile programs (Tanjasiri et al. 2002). They also found that the majority of women do not receive repeat screening following established guidelines. Major barriers included lack of health insurance and low emphasis on health prevention and promotion behaviors (Tanjasiri et al. 2000). A closer look at patterns of Pap smear testing among Samoans including 325 women from Hawai'i and 338 from Los Angeles found that 54 percent and 49 percent of those residing in Hawai'i and Los Angeles received Pap smears in the last three years (Mishra et al. 2001). Those who had finished high school or more education, had health insurance, and reported >$20,000 per year in income had much higher use of Pap smear tests than their counterparts who did not finish high school, did not have health insurance, and earned <$20,000 per year. Of note, knowledge of the Pap smear and attitudes toward it were not associated with use of Pap smear tests (Mishra et al. 2001). This suggests that structural factors such as level of education, type of occupation and health insurance are more important factors in predicting Pap smear testing among Samoan women. In new work in American Samoa, Mishra and colleagues (2009) found that a culturally tailored community-based participatory designed cervical cancer education program improved Pap smear test use in the intervention group. This type of work, although done in with those residing in American Samoa, may be very useful for development of behavioral interventions among Samoans in the United States, New Zealand, and Australia. A study of cancer-related knowledge and attitudes among Samoan men and women in Los Angeles, Hawai'i, and American Samoa found that those in Hawai'i and American Samoa were more likely to

report not wanting to know that they had cancer than those in Los Angeles (Mishra et al. 2000). In addition the same residential group differences were found regarding the role of spirits, *aitu,* and God's punishment in causing cancer, and the utility of traditional Samoan healers, *fofo,* in healing cancer. Further focused study of the same study sample showed that predominantly older Samoans sought the care of *fofo* for a variety of health conditions including biomedically defined musculoskeletal and neurologic problems, and Samoan sicknesses, *ma'i Samoa* (Mishra et al. 2003). Use of *fofo* was less in Hawai'i and Los Angeles than in American Samoa and was associated with beliefs that some illnesses afflict only Samoans.

Cigarette smoking among Samoans was described among men and women in Hawai'i and Los Angeles and across both sexes; 27 percent of those in Hawai'i—27 percent in men and 26 percent in women—and 24 percent in Los Angeles—31 percent in men and 18 percent in women—were current smokers (Mishra et al. 2005). Smoking cessation levels were very low. Those who were younger, married, less educated, with lower income, and more acculturated had higher odds of being current smokers.

In New Zealand, smoking prevalence in 2006 was 24 percent for Pacific men, and 29 percent for Pacific women (Rasanathan and Tukuitonga 2007). Young Pacific people in New Zealand have reported smoking percentages of 10.2 percent for males and 14.5 percent for females of 14 and 15 years (New Zealand Ministry of Health 2007). In the context of household crowding and socioeconomic deprivation exposure to secondhand smoke in the home is significantly higher for Pacific children and nonsmokers (Baker et al. 2008). Tuberculosis levels are relatively high in Pacific Islanders, including Samoans, in New Zealand (Das et al. 2006). Tuberculosis notification and laboratory data from 1995 to 2004 and population data from the 1996 and 2001 New Zealand Census were used to calculate incidence rates by age and ethnicity (Das et al. 2006). TB Incidence per 100,000 among European derived people was 2.0, among Maori 21.1, and among Pacific people 44.8, although outbreak reporting is incomplete. Maori and Pacific people were likely disproportionately affected by outbreaks, indicating social factors such as poor access to healthcare, delayed diagnosis, and increased transmission because of overcrowding. TB incidence is associated with overcrowding at the census area unit level (Baker et al. 2008). The co-occurrence of TB and conditions such as diabetes among Pacific Islanders in New Zealand has drawn attention and some informed speculation about its biocultural foundations (Littleton and Park 2009). They cite the common structural causes of poverty, household crowding, low health literacy, psychosocial stress from unmet lifetime aspirations and discrimination as leading to the biological initiation events for both obesity and diabetes and TB. They also describe how any interventions on these conditions require a detailed understanding of neighborhoods, livelihoods and the daily-lived life of Pacific Islanders.

CONCLUSION

There is clear evidence that Samoans residing outside the Samoas may be at high risk for poor levels of population health because of poverty, low health literacy, and sociocultural

influences on health care knowledge, attitude, and access. It is striking that almost no mental health research exists on these Samoans communities. There is little systematic information on Samoans in the United States and Australia. Given the trends from smaller focused studies and the national data from New Zealand, we recommend much more, and in some cases where there is none, some, population based health research among Samoans in the United States and Australia. New Zealand provides excellent examples of this with their attention to Pacific Islanders and the several ethnic groups comprising that general regional group. The United States changed the unhelpful category Asian American and Pacific Islanders so that Native Hawaiians and Pacific Islanders will become a separate category with further ethnic descriptions including Samoans (U.S. Office of Management and Budget 2007). Such representative samples of Samoans will also provide a more accurate picture of the spectrum of social and economic characteristics, acculturative processes, the returns and costs of connectedness to the families and villages in the Samoas, and population health characteristics.

There is an unfortunate tendency to see Samoans in the United States, New Zealand, and Australia as suffering from the effects of modernization, migration, and acculturation. This tendency is a product of the extant literature, which focuses on these difficulties and the negative health consequences to the exclusion of a more representative approach to all Samoans residing outside the archipelago. We need to understand the process of adjustment especially with Samoans born outside the Samoas and pursuing their life course there. For such second generation Samoans we have almost no information to help answer questions about health or the varieties of ways one goes about being, from birth onward, a Samoan not from the Samoas.

Finally, the clear articulation by contemporary Samoans residing outside the archipelago that they are, and want to remain, connected to their families and villages in the Samoas poses a research challenge. Future studies must assess the spectrum of connectedness among the Samoan diaspora both for descriptive and analytic research purposes about the variety of specific bidirectional influences that might be important for health and well-being wherever Samoans reside. This includes the possibility that some Samoans residing outside the Samoas may have and want less communication and exchange with extended family in the Samoas. Applied anthropologists among Samoans must include this perspective of a heterogeneous connectedness in their practice to improve the neighborhoods, livelihoods, and health of their communities and clients.

REFERENCES CITED

Australian Department of Immigration and Citizenship
N.d. Community Information Summary. http://www.immi.gov.au/media/publications/statistics/comm-summ/_pdf/samoa.pdf, accessed July 30, 2010.

Baker, Michael, Dilip Das, Kamalesh Venugopal, and Philippa Howden-Chapman
2008 Tuberculosis Associated with Household Crowding in a Developed Country. Journal of Epidemiology and Community Health 62(8):715–721.

Baruffi, Gigliola, Charles J. Hardy, Carol I. Waslien, Sue J. Uyehara, and Dmitry Krupitsky
2004 Ethnic Differences in the Prevalence of Overweight among Young Children in Hawaii. Journal of the American Dietetic Association 104(11):1701–1707.

Bindon, James R., and Shelley Zansky
1986 Growth Patterns of Height and Weight among Three Groups of Samoan Preadolescents. Annals of Human Biology 13(2):171–178.
Brown, Richard P. C., and John Connell
2004 The Migration of Doctors and Nurses from South Pacific Island Nations. Social Science and Medicine 58(2004):2193–2210.
Browne, Christopher, and Akio Mineshima
2007 Remittances in the Pacific Region. IMF Working Paper, WP/07/35. Washington, DC: IMF.
Connell, John, and Richard P. C. Brown
2005 Remittances in the Pacific: An Overview. Publication Stock, 110904. Manila: Asian Development Bank.
Cribb, Jo
1999 Being Bashed: Western Samoan Women's Responses to Domestic Violence in Western Samoa and New Zealand. Gender, Place and Culture 6(1):49–65.
Crichton-Hill, Yvonne
2001 Challenging Ethnocentric Explanations of Domestic Violence. Trauma, Violence and Abuse 2(3):203–214.
Das, Dilip, Michael Baker, Kamalesh Venugopal, and Susan McAllister
2006 Why the Tuberculosis Incidence Rate is Not Falling in New Zealand. New Zealand Medical Journal 119(1243):32–42.
Davidson, J. W.
1967 Samoa Mo Samoa: The Emergence of the Independent State of Western Samoa. Melbourne: Oxford University Press.
Fiaui, Pavela A., and Earl S. Hishinuma
2009 Samoan Adolescents in American Samoa and Hawai'i: Comparison of Youth Violence and Youth Development Indicators: A study by the Asian/Pacific Islander Youth Violence Prevention Center. Aggression and Violent Behavior 14(6):478–487.
Fitzgerald, Maureen H., and Alan Howard
1990 Aspects of Social Organization in three Samoan Communities. Pacific Studies 14(1):31–54.
Franco, Robert W.
1991 Samoan Perceptions of Work: Moving up and Moving around. New York: AMS Press.
Gao, Wanzhen, Janis Paterson, Sarnia Carter, and Leon Iusitini
2008 Intimate Partner Violence and Unplanned Pregnancy in the Pacific Islands Families Study. International Journal of Gynecology Obstetrics 100(2):109–115.
Godinet, Meripa T., and Halaevalu O. Vakalahi
2009 Conceptualizing Delinquency among Samoan Adolescents: An Integrative Model. Journal of Ethnicity in Criminal Justice 7:135–159.
Graves, Theodore D., and Nancy B. Graves
1985 Stress and Health among Polynesian Migrants to New Zealand. Journal of Behavioral Medicine 8: 1–19.
Hanna, Joel M.
1998 Migration and Acculturation among Samoans: Some Sources of Stress and Support. Social Science and Medicine 46(10):1325–1336.
Hanna, Joel M., and Paul T. Baker
1979 Biocultural Correlates to Blood Pressure of Samoan Migrants to Hawaii. Human Biology 51:481–497.
Hanna, Joel M., Maureen H. Fitzgerald, Jay D. Pearson, A. Howard, and J. Martz-Hanna
1990 Selective Migration from Samoa: A Longitudinal Study of Pre-Migration Differences in Social and Psychological Characteristics. Social Biology 37(3–4):204–214.
Hawai'i Department of Business, Economic Development and Tourism
2008 American Community Survey 2008 Hawaii. http://www.hawaii.gov/dbedt/info/census/ACS2008/acs_hi_2008_pop_profiles, accessed July 30, 2010.

Hawai'i Department of Education
2008 Introduction, Enrolment. http://www.doe.k12.hi.us/about/intro_enrollment.htm, accessed July 30, 2010.
Janes, Craig R.
1990a Migration, Changing Gender Roles and Stress: The Samoan Case. Medical Anthropology 12(2):217–248.
1990b Migration, Social Change and Health: A Samoan Community in Urban California. Stanford: Stanford University Press.
Keesing, Felix M.
1934 Modern Samoa: Its Government and Changing Life. London: Allen and Unwin.
Keighley, Ember, Stephen T. McGarvey, Christine Quested, Charles McCuddin, Satupaitea Viali, and Uto'ofili A. Maga
2007 Nutrition and Health in Modernizing Samoans: Temporal Trends and Adaptive Perspectives. In Health Change in the Asia-Pacific Region: Biocultural and Epidemiological Approaches. R. Ohtsuka, S. J. Ulijaszek, eds. Pp. 147–191. Cambridge: Cambridge University Press.
Lai, Mary H.
2009 Toward an Integrative and Collaborative Approach to Asian American and Pacific Islander Youth Violence Research, Practice, and Policy. Aggression and Violent Behavior 14(6):454–460.
Liki, Asenati
2001 Moving and Rootedness: The Paradox of the Brain Drain among Samoan Professionals. Asia-Pacific Population Journal 16(1):67–84.
Lilomaiava-Doktor, Sa'iliemanu
2009 Beyond "Migration": Samoan Population Movement (Malaga) and the Geography of Social Space (Vā). The Contemporary Pacific 21(1):1–32.
Littleton, Judith, and Julie Park
2009 Tuberculosis and Syndemics: Implications for Pacific Health in New Zealand. Social Science and Medicine 69(11):1674–1680.
Macpherson, Cluny
1978 Samoan Migration to New Zealand and Polynesian Migration and Settlement. *In* New Neighbors: Islanders in Adaptation. Cluny Macpherson, Bradd Shore and Robert Franco, eds. Pp. 11–18. Santa Cruz: University of California Center for South Pacific Studies.
Magnussen, Lois, Jan Shoultz, Kay Hansen, Merina Sapolu, and Mili Samifua
2008 Intimate Partner Violence: Perceptions of Samoan Women. Journal of Community Health 33(6):389–394.
McGarvey, Stephen T., and Paul Baker
1979 The Effects of Modernization and Migration on Samoan Blood Pressure. Human Biology 51(4):461–479.
McGarvey, Stephen T., and Diana E. Schendel
1986 Blood Pressure of Samoans. *In* The Changing Samoans: Behavior and Health in Transition, Paul T. Baker, Joel M. Hanna, and Thelma S. Baker, eds. Pp. 351–393. New York: Oxford University Press.
Misatauveve, Melani Anae
N.d. Samoans—Facts and Figures. Te Ara—The Encyclopedia of New Zealand, updated March 4, 2009. http://www.TeAra.govt.nz/en/samoans/6, accessed July 30, 2010.
Mishra, Shiraz I., Jürgen Hess, and Pat H. Luce
2003 Predictors of Indigenous Healer Use among Samoans. Alternative Therapies in Health and Medicine 9(6):64–69.
Mishra, Shiraz I., Pat H. Luce, and Claudia R. Baquet
2009 Increasing Pap Smear Utilization among Samoan Women: Results from a Community Based Participatory Randomized Trial. Journal of Health Care for the Poor and Underserved 20(Supp. 2):85–101.

Mishra, Shiraz I., Pat Luce-Aoelua, and F. Allen Hubbell
2000 Knowledge of and Attitudes about Cancer among American Samoans. Cancer Detection and Prevention 24(2):186–195.
2001 Predictors of Papanicolaou Smear Use among American Samoan Women. Journal of General Internal Medicine 16(5):320–324.
Mishra, Shiraz I., Pat Luce-Aoelua, Lynne R. Wilkens, and Leslie Bernstein
1996 Cancer among American-Samoans: Site-Specific Incidence in California and Hawaii. International Journal of Epidemiology 25(4):713–721.
Mishra, Shiraz I., Kathryn Osann, and Pat H. Luce
2005 Prevalence and Predictors of Smoking Behavior among Samoans in Three Geographical Regions. Ethnicity and Disease 15(2):305–315.
Negin, Joel
2008 Australia and New Zealand's Contribution to Pacific Island Health Worker Brain Drain. Australia and New Zealand Journal of Public Health 32(6):507–511.
New Zealand Ministry of Social Development
2009 The Social Report 2009. http://www.socialreport.msd.govt.nz/paid-work/unemployment.html, accessed July 30, 2010.
New Zealand Ministry of Health
2007 Pacific Health Factors Affecting Pacific Peoples' Health. Wellington: Ministry of Health.
Novotny, Rachel, Vanessa Nabokov, Christopher Derauf, John Grove, and Vinutha Vijayadeva
2007 BMI and Waist Circumference as Indicators of Health among Samoan Women. Obesity 15(8):1913–1917.
Paterson, Janis, Peggy Fairbairn-Dunlop, Esther T. Cowley-Malcolm, and Philip J. Schluter
2007a Maternal Childhood Parental Abuse History and Current Intimate Partner Violence: Data from the Pacific Islands Families Study. Violence and Victims 22(4):474–488.
Paterson, Janis, Michael Feehan, Sarnia Butler, Maynard Williams, and Esther T. Cowley-Malcolm
2007b Intimate Partner Violence within a Cohort of Pacific Mothers Living in New Zealand. Journal of Interpersonal Violence 22(6):698–721.
Paterson, Janis, Teuila Percival, Philip Schluter, Gerhard Sundborn, Max Abbott, Sarnia Carter, Esther Cowley-Malcolm, Jim Borrows, Wanzhen Gao, and the PIF Study Group
2008 Cohort Profile: The Pacific Islands Families (PIF) Study. International Journal of Epidemiology 37(2):273–279.
Pawson, Ivan
1986 The Morphological Characteristics of Samoan Adults. In The Changing Samoans: Behavior and Health in Transition. Paul T. Baker, Joel M. Hanna, and Thelma S. Baker, eds. Pp. 254–274. New York: Oxford University Press.
Pawson, Ivan, and Craig G. Janes
1981 Massive Obesity in a Migrant Samoan Population. American Journal of Public Health 71:508–513.
Pearson, Jay D., and Joel M. Hanna
1989 Selective Migration as a Bias in Modernization Studies: Premigration Differences in Morphology and Blood Pressure among 15–30-year-old American Samoans. American Journal of Human Biology 1(3):263–269.
Pirie, Peter
1970 Samoa: Two approaches to Population and Resource Problems. In Geography and a Crowding World. Wilbur Zelinsky, Leszek A. Kosinski, and R. Mansell Rothero, eds. Pp. 493–508. New York: Oxford University Press.
Rasanathan, Kumanan, and Colin F. Tukuitonga
2007 Tobacco Smoking Prevalence in Pacific Island Countries and Territories: A Review. New Zealand Medical Journal 120(1263):U2742.
Schaaf, David, Robert Scragg, and Patricia A. Metcalf
2000 Cardiovascular Risk Factors Levels of Pacific People in a New Zealand Multicultural Workforce. New Zealand Medical Journal 113(1102):3–5.

Schluter, Philip J., Janis Paterson, and Michael Feehan
2007 Prevalence and Concordance of Interpersonal Violence Reports from Intimate Partners: Findings from the Pacific Islands Families Study. Journal of Epidemiology and Community Health 61(7):625–630.
Sundborn, Gerhard, Patricia A. Metcalf, Dudley Gentles, Robert K. R. Scragg, David Schaaf, Lorna Dyall, Peter Black, and Rod Jackson
2008 Ethnic Differences in Cardiovascular Disease Risk Factors and Diabetes Status for Pacific ethnic groups and Europeans in the Diabetes Heart and Health Survey (DHAH) 2002–2003, Auckland New Zealand. New Zealand Medical Journal 121(1281):128–139.
Tanjasiri, Sora P., Marjorie Kagawa-Singer, Tu-Uyen Nguyen, and Mary A. Foo
2002 Collaborative Research as an Essential Component for Addressing Cancer Disparities among Southeast Asian and Pacific Islander Women. Health Promotion Practice 3:144–154.
U.S. Census Bureau
2001 Census 2000. Summary File 1 (SF 1) 100-Percent Data. Table PCT 10: Native Hawaiian And Other Pacific Islander Alone or in Combination with One or More Races and with One or More Native Hawaiian and other Pacific Islander Categories for Selected Groups. Washington, DC: Government Printing Office.
U.S. Office of Management and Budget
2007 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. U.S. Federal Register Notice, Oct 30, 1997. Washington, DC: Government Printing Office.