THE MALAISE OF MODERNITY: URBANIZATION, MOBILITY, AND HIV IN THE PACIFIC

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The human immunodeficiency virus (HIV) is unevenly distributed in the Pacific. Most cases are found in Papua New Guinea (PNG). In most Pacific Island states, transmission of HIV is sexual and heterosexual. Urbanization, migration, and mobility are key influences on its distribution and spread. Migration into towns and workplaces, mobility between towns and overseas employment, and return migration influence infection rates. Sex work, mainly an urban phenomenon, is a key source of transmission. High-risk sexual behavior, migration, affluence, poverty, and inequality coincide in urban areas. Different mobile groups include commercial sex workers, skilled workers, and seafarers. Most such groups migrate often but exhibit different risk behavior, access to services, and HIV vulnerability. Mobility along the Highlands Highway in PNG and of i-Kiribati seafarers globally demonstrates different relationships between culture, mobility, and HIV risk. Appropriate multisectoral HIV responses would take migration and mobility into consideration to ensure that interventions address the drivers of mobility and its specific consequences.

Introduction

PACIFIC ISLAND STATES experience a range of human immunodeficiency virus (HIV) prevalence rates, between and within states, and within various groups. Significant differences also exist in institutional responses and the funding availability and capacity to support provision of HIV services. Various factors influence prevalence rates, including migration and mobility, which also vary regionally between and within states. The first case of HIV

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in the Pacific was reported in 1982, and HIV cases have subsequently occurred everywhere, except in such small (and relatively isolated) states as Niue and Tokelau (Sladden 2005). The numbers of cases are low in most Pacific countries (although there is significant underreporting), but Papua New Guinea (PNG) stands out both in terms of its HIV situation and in its large population and complex internal migration and urbanization. Studies in Africa and Asia have traced the relationships between mobility, HIV, and AIDS, but this has not hitherto been undertaken for the Pacific; hence, this paper seeks to provide a contemporary overview of the HIV/AIDS context in the island Pacific, with particular reference to migration, mobility, and urbanization, which are a function of modernity and inequality.

HIV is a social and economic phenomenon and not solely a biomedical phenomenon and challenge. Although the spread of HIV is shaped by culture, it is increasingly linked to issues of social and economic equality and justice (London and Schneider 2012). Given one definition of vulnerability to HIV as "the lack of power of individuals and communities to minimize or modulate their risk of exposure to HIV infection and, once infected, to receive adequate care and support" (Gruskin and Tarantola 2002), along with the UNAIDS definition stating that "vulnerability results from a range of factors outside the control of the individual that reduce the ability of individuals and communities to avoid HIV risk" (UNAIDS 2008), it is not so much migration itself that is relevant for HIV vulnerability but the socioeconomic context in which contemporary mobility is situated. Equally it is not migration that leads to HIV risk but migrant behavior, although mobility puts people in situations where high-risk behavior is more likely: greater freedom, peer pressure to fit in to a new place, loss of social support, social disruption, anomie, and anonymity.

Mobility has been associated with higher HIV prevalence in southern Africa as far back as the 1980s (Hunt 1989; Jochelson, Mothibeli, and Leger 1991; Zuma et al. 2003; Mtika 2007; Greif and Dodoo 2011), in West Africa (Lydié 2004; Khan et al. 2007), in Mexico (Carrillo 2010), and in most of Asia including Indonesia and Thailand (Chantavanich 2000; Lyttleton and Amarapibal 2002; Simonet 2004; Hugo 2005). Typically, as in Malawi, "mobility is associated with increased extramarital multi-partner sexual relations through which HIV is spread" (Mtika 2007), whereas Lydié et al.'s (2004) work in Cameroon revealed that men who were away from home for more than a month were five times more likely to be HIV positive than were those who never left home. There is growing global evidence of a close association between increased vulnerability during mobility and the spread of HIV. It is argued here, in contrast to other recent analyses (O'Keefe 2011), that mobility has played a similarly important role in the island Pacific and that as migration and urbanization gradually take forms

more like those in other parts of the world, migrants tend to be at greater risk of HIV. The selectivity of migration and the socioeconomic contexts of their destinations (embodying the desire for income generation and recreation) may predispose migrants to behaviors more likely to transmit HIV. Migrants tend to be increasingly socially and economically marginalized and isolated, with limited access to health services, including health promotion, and to HIV care and support. This paper seeks to review and synthesize information on mobility and HIV in the Pacific within the wider context of modernity.

HIV in the Pacific

Health status varies considerably within the Pacific, as a function of political status, economic and social development, and availability of health care. Enormous variations exist in health services provision and financing. At the core of the uneven distribution of human resources, hospital beds, and other physical resources are significant variations in funding, in absolute terms, and in the proportion of national budgets spent on health care (Taylor, Bampton, and Lopez 2005; Connell 2009). Health challenges range from the spread of malaria in Melanesia, to "the unfinished agenda in achieving the MDGs [Millennium Development Goals], high fertility rates, continued prevalence of communicable diseases and emerging threat of HIV/AIDS, combined with a rising, and in many cases a crisis in, NCD [non-communicable disease] prevalence" (World Bank 2007). Substance abuse is a growing problem, and its incidence is universally worsening. In the Marshall Islands, for example, substance abuse contributes to emerging and re-emerging infections, like HIV, other sexually transmitted infections, and tuberculosis. Reductions in spending on health care and health promotion systems in the Pacific, evident from the 1980s, have had a damaging result in sustaining a skilled health workforce, meeting contemporary needs and developing preventative systems appropriate for dealing with HIV.

Globally, an estimated 33 million people live with HIV and acquired immunodeficiency syndrome (AIDS) (UNAIDS 2010a). The Pacific region accounts for just 0.2% of the global burden of HIV, with the majority of these in PNG, Australia, and New Zealand. According to Secretariat of the Pacific Community (SPC) data from 2009, approximately 30,000 cumulative cases of HIV and AIDS were reported across all Pacific Island states, of which approximately 28,000 cases occurred in PNG (Table 1). However, the 2007 Estimation Report on the HIV Epidemic in Papua New Guinea estimated that there were 54,000 cases of HIV in PNG, whereas a more recent report cited 34,100 people living with HIV as of 2009 (UNAIDS 2010b). The variations in estimates demonstrate the difficulties of obtaining

TABLE 1. **Pacific Population and Reported Cases of HIV and AIDS at the End of 2009 (Secretariat of the Pacific Community 2010).**

Country	Population (mid-2009)	HIV-reported cases (including AIDS)	Cumulative incidence per 100,000
Melanesia	8,478,155	28,989	341.9
Fiji	843,888	333	39.5
New Caledonia	250,612	344	137.3
PNG	6,609,745	28,294	428.1
Solomon Islands	535,007	13	2.4
Vanuatu	238,903	5	2.1
Micronesia	539,439	352	65.3
Federated States of Micronesia	110,899	37	33.4
Guam	182,207	196	107.6
Kiribati	98,989	52	52.5
Republic of Marshall Islands	54,065	22	40.7
Nauru	9,771	2	20.5
Northern Marianas	63,112	34	53.9
Palau	20,397	9	44.1
Polynesia	660,026	372	56.4
American Samoa	65,113	3	4.6
Cook Islands	15,636	2	12.8
French Polynesia	265,654	314	118.2
Niue	1,514	0	
Pitcairn Islands	66	0	
Samoa	182,578	22	12.0
Tokelau	1,167	0	
Tonga	103,023	18	17.5
Tuvalu	11,093	11	99.2
Wallis and Futuna	14,183	2	14.1
All PICs	9,667,620	29,713	307.0
All PICs excluding PNG	3,067,874	1,419	46.3

reliable epidemiological data both nationally (National AIDS Council of Papua New Guinea 2008) and in particular regions (Haley 2008), although the relativities are reasonably accurate.

The majority of HIV cases are in PNG, and outside PNG numbers remain low, although high rates of sexually transmitted infections (STIs) and teenage pregnancies suggest the possibility of higher rates of HIV transmission in the future. (HIV infection exists in all provinces; however, over 50% of HIV infections have been reported in the National Capital District). Although low numbers of HIV infections occur in the Pacific, beyond PNG in particular and to a lesser extent New Caledonia, Guam,

and French Polynesia, a number of social and behavioral factors common across the region present risk factors for transmission. In most places, the mode of spread of HIV is sexual—primarily through unprotected heterosexual intercourse, including paid intercourse. Some mother-to-child transmission also occurs. Injecting drug use is rare, unlike in Asia where it drives the regional epidemic. Male-to-male (MSM) sex is also considered to be relatively slight. However, data collection and research regarding the extent of these and their effects on HIV have been primarily limited to PNG and Fiji (McMillan and Worth 2010a). Significant risk factors include mobile populations, involving a large population of seafarers, opposition and taboo toward sex and sex education, and high levels of stigma and fear surrounding HIV and those who have it (Hammar 2007; Jenkins 2005; PIAF 2011). Additionally, there are relatively high levels of early sexual debut in the region as well as high levels of unprotected sex among young people (Jenkins 2005; WHO 2006).

The factors driving the epidemic in PNG are not universally agreed upon; but low levels of condom use, concurrent sexual partnerships, gender inequality, high prevalence of untreated STIs, low levels of literacy, a weak health system within patriarchal societies, and a high prevalence of sexual violence against women are all factors (Hammar 2007; Dundon and Wilde 2007; Wardlow 2007). In many parts of PNG, even basic knowledge of HIV is largely absent (Wilde 2007; Haley 2008; Lepani 2008b). Both prostitution and the rise of HIV have followed increased urban poverty and, in some contexts such as the Southern Highlands (SHP), greater rural poverty (Wardlow 2007, 2008; Haley 2008). Higher levels of divorce have left more women destitute. Where alternative incomes are particularly difficult to obtain, prostitution may even amount to "survival sex" (Beer 2008) as a consequence of "economic desperation" (Hammar 2010, 19). In Tari (SHP), and perhaps elsewhere, "the reality is that many Huli women receive money and gifts for sex occasionally, if there is no alternative income" (Hughes 2002, 131). Conversely the emergence of MMM (mobile men with money) is a significant factor in the rise of HIV. Labor migration has spurred the development of a masculine identity that encourages men to demonstrate their independence from community expectations through sexual partnerships. The combination of mobility and extramarital relationships has meant that marriage has become a very significant risk factor (Wardlow 2007, 2010; Hammar 2010) as has happened elsewhere in the world (Hirsch et al. 2007; Smith 2007). HIV infection has been reported in all provinces; the highest prevalence rates are in Port Moresby and the Highlands (National AIDS Council PNG 2010a). More people receive treatment in the National Capital District than anywhere else but this is partly attributable to people travelling to the capital to access testing and treatment and

avoid possible stigma (National AIDS Council PNG 2008). It is argued here that variants of these factors are emerging elsewhere in the Pacific region and especially elsewhere in Melanesia.

Levels of sexually transmitted infections (STIs) are high compared with many other parts of the world (WHO 2006; Brown et al. 1998). A six-country study revealed that the prevalence of Chlamydia among pregnant women ranged from 6% in Solomon Islands to 29% in Fiji and was high among all women under 25 years of age (WHO 2006, Cliffe, Tabrizi, and Sullivan 2008). Female Chlamydia prevalence rates of over 30% in Fiji and Samoa are among the highest in the world, indicating widespread unprotected sex and the likelihood that men also have high levels of untreated STIs. The increase in STIs has been driven by unprotected sexual behavior and coincides with a recent increase in teenage pregnancies. Rates of condom use with a noncommercial partner range from 12.5% in Fiji to 45% in the Solomon Islands, further indicating considerable unprotected sex, whereas the percentage of youth reporting two or more sexual partners in the last twelve months ranged from 43% in Vanuatu to 13% in Samoa (WHO 2006). Condom use among sexually active teenagers is less than 20%, although there are significant regional variations (McMillan and Worth 2011), whereas high teenage fertility is consistent with low contraceptive prevalence among teenagers, and extramarital sex may also be increasing in significance (Connell and Negin 2010). Individuals with a high rate of changing sex partners play a disproportionate role in the spread of HIV and other STIs. Underlying these more specific contexts, mobility and migration have become significant drivers and correlates of HIV transmission in the Pacific.

Economic Development, Migration, and Mobility

The incidence and status of HIV is closely related to economic status and its link to mobility. Movement of people within the Pacific has gradually intensified in volume, increased in distance, and become more complex in pattern and purpose. With modern transportation, stagnation of rural economies and services, the emergence of resource enclaves (logging and mining), and uneven development, migration and urbanization have increased (Connell 2006, 2011). Urban centers are growing fastest in Melanesia, through both natural increase and migration, and towns and cities are larger than elsewhere, although only Port Moresby and Suva are larger than 100,000. Moreover, in Melanesia, many cities also have a high proportion of urban residents in more or less informal settlements.

The economies of Pacific Island states and territories are limited through a combination of well-known factors including small populations and land

areas, limited resources, remoteness, fragmentation, susceptibility to extreme events, vulnerability to external economic shocks and hazards, trade imbalances, and fragile environments. Growth and development is also constrained by high communication, energy and transportation costs, narrowly specialized economies, disproportionately expensive public administration and infrastructure attributable to their small size, scarce local skills, and little to no opportunity to create economies of scale (e.g., McGillivray, Naudé, and Santos-Paulino 2010). In this century, migration to the metropolitan states bordering the Pacific has become something of an outward urge that is increasingly global (Connell 2006, 2008, 2009). Relatively impoverished Kiribati and Tuvalu have experienced limited outmigration but have been dependent for a century on temporary labor migration to Nauru (now ended) and employment on shipping lines. As in Samoa and Tonga, overseas remittances in Kiribati, primarily from seafarers, are the primary source of income for as many as 30% of urban households (Borovnik 2006). Considerable short-term mobility occurs alongside migration, some of which, such as working as army or shipping crew, may extend over long distances, and some work employment (for example on ships and in mines) takes workers away from domestic contexts for lengthy periods. The movement of students to schools and colleges, patients to hospitals, job seekers looking for work, or visiting distant kin also take people away for various periods of time, because society becomes more fluid and less localized. Weak national economies and low incomes indicate that most island states are ill-prepared to tackle poverty, HIV, and sexual and reproductive health issues, which directly affect population growth and well-being.

The Pacific does not generally experience absolute poverty, but poverty is increasing alongside significant and growing urban social and economic problems (Abbott and Pollard 2004; Connell 2011). Poverty results from, and is manifested in, increasing urban populations, a lack of employment opportunities, the absence of effective safety nets and social protection, and limited access to land and housing. The popular and romantic view of an urban safety net provided by the extended family, ensuring through redistribution that kin are never hungry or destitute, is no longer valid (Monsell-Davis 1993). Throughout the Pacific, poverty is associated with larger household sizes, indicating the risk of reproduction of poverty (Rallu and Ahlburg 2012). In squatter settlements especially, hunger and poverty are no longer unusual nor is the sight of people picking through municipal garbage sites for food and other goods.

Income levels in the region are key influences on social and economic behavior and on migration. Rising poverty has clear implications for public

health. The combination of migration, greater urban permanence, few urban employment opportunities, and the lack of industrialization has resulted in the growing significance of the informal sector as a source of livelihood. A significant proportion of female workers in the informal sector in PNG are sex workers (Levantis 1997). Incomes from prostitution may be significantly more than those obtainable in other urban contexts, as in Kiribati where sex workers earned more than teachers and nurses or in Port Moresby where they are substantially above the lower ranks of the formal sector (Connell 1997; UNICEF Pacific and the Government of Kiribati 2010). In Honiara, too, incomes from sex work are very variable but are the highest of any informal livelihoods (Russell 2009). Most urban families have at least one income earner in the formal sector, but low wages and young dependents typically mean that many household incomes remain below the poverty line (Abbott and Pollard 2004; Connell 2011; Storey and Connell 2012). Moreover urban unemployment is increasing with levels frequently substantially above 10% where measured youth unemployment rates are frequently above 30%, as reported for Tonga, Tuvalu, Nauru, and as high as 60% for the Marshall Islands and 70% in Port Moresby and South Tarawa (Kiribati). In most states, less than a quarter of those leaving school early can find employment in the formal sector (Storey and Connell 2012). A further consequence of difficult urban conditions is the growth of domestic violence and in the number of female-headed households that follows family breakdown and social disorganization. Such female-headed households have significant problems of income generation, which may result in some orientation toward commercial sex work. Many women take up sex work out of poverty. In PNG, sex workers "were from squatter settlements and urban villages, from 'broken homes' or very large families, single mothers or with unemployed husbands" (Connell 1997, 206). Poverty was similarly significant in rural areas (Haley 2008; Wardlow 2008). In Fiji, "Financial need was the overwhelming reason for selling sex ... [many] took up sex work to bring in money to the home after a parent had died or abandoned the family ... [many] came from very poor backgrounds" (McMillan and Worth 2010a: 1, 11). Poverty and urbanization are risk factors.

To examine the utility of mobility as an overarching lens for examining HIV infection in the Pacific, three distinct case studies are examined. The more general significance of urbanization in HIV infection is first examined, whereas mobility on the Highlands Highway in PNG and the migration of i-Kiribati seafarers provide two more specific cases of the relationship between mobility, risk behaviour, and HIV/AIDS.

Urbanization

Migration has directly contributed to urbanization, especially where international migration has been limited, as in Melanesia. Urbanization has been rapid, beyond the rate of job creation, resulting in high levels of unemployment, poverty, informal settlement and environmental degradation, and, in the atoll states of Kiribati, Tuvalu, and the Marshall Islands, exceptionally high population densities. Urbanization has here been accompanied by rapid population growth (heightened through the limited impact of family planning). Most internal migration is to the largest urban centers, often primate cities, and, in PNG, to some mining towns. Contemporary migration has continued to bring new migrants to Pacific Island states. A new wave of Chinese migrants has become established, notably in PNG, Tonga, Fiji, and the Solomon Islands. Smaller numbers of Indians, Filipinos, and others represent distinct population flows, alongside a regular flow of Europeans, as miners, aid donors, missionaries, entrepreneurs, lecturers, and so on. The island Pacific, and especially its urban centers, is now as cosmopolitan as it has ever been.

Mobility in and out of towns has contributed to a relatively large "floating" population, with uncertain allegiance to rural or urban areas and without roots in either. Such fluctuating groups, without permanent jobs or income, are at particular social, economic, and epidemiological risk. Cities are also places with transient populations, such as seafarers, sex workers, and tourists, and places of anonymity for gay and transgender groups. Migrants, many being unemployed single men, are also associated with high crime rates, most evident in Port Moresby and other PNG urban centers (Levantis 1997; Connell and Lea 2002; Buchanan-Aruwafu 2007). In such contexts, social organization is put under pressure, without "traditional" social control. Informal settlements have proliferated, notably in Melanesia, Fiji, and Kiribati, predominantly housing the urban poor, outside the control and authorization of government and planners, and with limited services (Connell 2011; Storey and Connell 2012). Without more effective responses and institutions, informal settlements on indigenous land are becoming the dominant form of contemporary urban growth, which makes infrastructure and service needs difficult to address.

Social disorganization and crime increasingly follow urban inequality. Increases in poverty, crime, and periodic unrest are evident, with Nuku'alofa and Honiara having experienced riots over inadequate urban employment and quality of life. In PNG a "pervasiveness of sexual assaults and gang rapes" exists, and this impersonal and institutional violence against women, even among groups such as the police, has direct implications for the

increased incidence of HIV (Lepani 2008a: 150, 156) and for the breakdown of family structures (Wardlow 2004). Urbanization and low incomes have resulted in a downward spiral—an urban "poverty trap" from which there appears little hope of improvement and, for some urban residents, a sense of biding time, waiting for unforeseen and uncertain opportunities, securing multiple jobs (where possible), maintaining strict budgets, and abandoning some traditional obligations, simply to get by. Mining towns have unbalanced sex ratios. Tensions between landowners and migrants exist in the face of land shortages; bureaucratic ineptitude and political corruption have contributed to division and urban insecurity.

Commercial sexual activity is ubiquitously more prevalent in urban areas where there is greater anonymity and opportunity, less social control, and both desire for and availability of cash. Thus, in Vanuatu, the proportion of sexually active youth having sex for money in Port Vila was about twice that of youth on the islands of Malakula and Tanna (UNICEF Pacific and Government of Vanuatu 2010). Although HIV infection rates are universally argued to be higher in urban areas (Dyson 2003), the only country where spatial data exist is PNG. In 2010, the National Department of Health stated that the vast majority of people living with HIV are in urban or peri-urban areas. The majority of people diagnosed with HIV live in Port Moresby and other urban and peri-urban areas, mainly in provinces linked by the Highlands Highway from Lae to the Southern Highlands. Estimates record HIV prevalence rates of 3–4% in Port Moresby, well over 2% in other *urban* areas, and 1% in rural areas (National AIDS Council PNG 2010b). In PNG, infection rates are also particularly high among young urban girls and women, and adolescent girls and young women are particularly vulnerable to cross-generational sexual relations (Lepani 2008a: 151). Urban areas are associated with certain HIV risk factors: "rates of social interaction are higher in urban areas, and fields of social interaction are wider too—phenomena [with] implications for patterns of sexual interaction. . . . And higher-risk behaviors (such as commercial sex activities) tend to be more prevalent in towns and cities" (Dyson 2003, 429). High levels of alcohol consumption and substance abuse are associated with risky sexual activity, and the absence of kin has resulted in customary and familial structures for socialization being absent or ineffective. The increase in poverty and informal settlements poses particular concerns.

Risky sexual activity has also followed new economic contexts. In PNG, the rise of HIV has been closely linked to the emergence of MMM, who characterize larger urban areas and are personified as a new kind of "sugar daddy," embodied in PNG as the *dakglas kar man* (dark glass car man): businessmen, landowners, and politicians with plenty of disposable income

(Lepani 2008a) and detached from followers and moral responsibilities (Martin 2010). Lesser MMMs are significant in many social contexts involving high mobility and economic disparity, especially where men are involved in various forms of itinerant wage labor, often in resource enclaves such as mining and logging and where limited educational and employment opportunities for women encourage commercial and transactional sex (Koczberski 2000; Wardlow 2007; Wilde 2007; Lepani 2008a, 152; Hammar 2010). In urban areas, intergenerational sexual relations are more common, interactions between various groups more frequent and sexual networking more widespread. Thus, in Majuro, in the Marshall Islands, high-risk sexual networking links foreign sex workers, seafarers, Marshallese young women involved in the informal exchange of sex, local Marshallese women and men, and migrant and expatriate workers (Buchanan-Aruwafu 2007). A broadly similar situation exists in Tarawa where ship girls and bar girls, most originally from outer islands, service crew of diverse foreign ships and also inject drugs (McMillan and Worth 2010b; UNICEF Pacific and the Government of Kiribati 2010). These kinds of complexities emphasize the multiple problems and contexts of urbanization.

The presence of commercial sex workers primarily in urban areas is a major risk factor and the social significance of sex work of considerable significance in the spread of HIV. Transactional sex for cash is significant in many parts of the region, spearheaded by PNG, Fiji, and Solomon Islands (McMillan and Worth 2010a). Capital cities and ports, even such small centers as Kiritimati (Kiribati) and Daru (PNG), are critical nodes in sex work and HIV transmission. Honiara is highly significant but alongside Gizo and Noro, which are accessible to logging camps and a tuna cannery (UNICEF Pacific and Government of Solomon Islands 2010). In New Caledonia, urban sex workers have been identified by the government as the priority high-risk group (Agence Sanitaire et Sociale de Nouvelle-Calédonie 2007; Germain, Grangeon, and Klinger 1998), as also in Suva, Tarawa, and Majuro.

Commercial sex work is often informal and sporadic rather than full-time, although it has become more organized. Although most commercial sex workers are Pacific Islanders, a growing number of migrant prostitutes work in the region, mainly from China, as in Fiji and Tonga, who play an additional role in servicing Asian fishermen and sailors, and in Saipan and Guam work in massage parlors, clubs, and karaoke bars, many oriented to an Asian tourist clientele. Distinctive trafficking situations also occur (Connell and Negin 2010). The principle influence on women becoming sex workers is poverty, alongside a fragmented household structure; hence, growing urban poverty has increased the extent and reduced the age of

prostitution. In Kiribati, those who engaged in commercial sex did so because they needed money (42%), drugs or alcohol (28%), and food (3%), and more than half had sex on ships (UNICEF Pacific and the Government of Kiribati 2010). In the Solomon Islands, notably Honiara, comparable percentages were 60%, 3%, and 8% (UNICEF Pacific and Government of Solomon Islands 2010). Sex work also provides some personal freedom; in PNG, some women who became *pasindia meri* (prostitutes) exhibited a degree of rebellion and autonomy that gave them an ability to "move through the local and national landscape that other women do not exercise" (Wardlow 2004, 1019). Commercial organization varies. Although Asian prostitutes in Fiji tend to be organized in brothels, local sex workers there and elsewhere are found in diverse locations, usually markets, bars, and particular streets. The average age of sex workers is falling, with some girls as young as thirteen engaged in prostitution (Save the Children Fiji 2005). Fragmentary information exists on how sex work is organized or, indeed, whether it is organized (although massage parlors are becoming more common), who the sex workers are (their ethnic origin), their incomes, whether they are long-term or temporary workers (and whether they drop in and out of urban life), and their health status.

Sex workers engage in sexual activity with multiple partners. In Port Moresby, as many as 60% of married men acknowledged engaging in commercial sex activities (WHO 2000). By contrast, among males in Fiji, some 16% had engaged in commercial sex, whereas corresponding figures were 10% of Marshallese and 2% of Samoans (Jenkins 2005). The transactional basis limits the ability of sex workers to insist on condom use, a clear risk factor, and some clients pay extra for sex without a condom. In Fiji, only 8% of men reported using a condom the last time they had sex with a commercial female partner (Government of Fiji 2006). Condom use among sex workers in PNG and Vanuatu was very inconsistent; in PNG, 85% reported that they did not use condoms at all times, because of dislike by clients, unavailability, alcohol or marijuana use, and familiarity with a client (Wan Smolbag 2006; National AIDS Council Secretariat Papua New Guinea and National HIV/AIDS Support Project 2007). In Kiribati, Vanuatu, and Solomon Islands, 51%, 39%, and 34%, respectively, of those engaged in commercial or transactional sex did not use a condom, whereas condom use was widely seen as analogous to prostitution (UNICEF Pacific and the Government of Kiribati 2010; UNICEF Pacific and Government of Solomon Islands 2010; UNICEF Pacific and Government of Vanuatu 2010).

A study of 407 female sex workers in Port Moresby and Lae revealed an HIV prevalence of 10% and rates of STIs ranging from 31% to 36%, whereas sex workers in Port Moresby had significantly higher HIV infection

rates (17%) than those in Lae (3%) (Mgone et al. 2002). A further study in the Eastern Highlands of PNG found that 74% of female sex workers were positive for at least one STI, and 43% had multiple STI infections (Gare et al. 2005). Less normative sexual activity is an urban phenomenon. MSM activity is much more significant in urban areas where opportunity and anonymity are greater and social control weaker. A particular component of urban sexual activity involves relationships between tourists and sex workers and sex tourism. Sex tourism has been described in the Pacific, mainly based on anecdotal evidence, for Fiji and the Solomon Islands (Christian Care Centre 2005; Save the Children Fiji 2005). The urban location of much commercial sexual activity is linked to the high urban incidence of both HIV and other STIs.

Where tourism exists, commercial sexual activity is generally associated with distinct urban nodes. Following greater surveillance in Asia, some "tourists" travel to the Pacific seeking anonymity and the availability of children. Child sex tourism is partly driven by poverty and weak law enforcement but also by demands for greater access to cash (driven by a lack of access to education and employment), parental neglect, and abuse at home (Save the Children Fiji 2005). The extent to which sex tourism introduces new HIV risk factors to the region, and especially to tourist centers such as Fiji, is yet to be established.

The relatively high level of HIV in PNG points to the significance of internal migration (including to logging camps and mines) and urbanization as critical influences and suggests that an increasing prevalence may subsequently occur in such rapidly growing urban areas as Honiara, Port Vila, and Suva, where international migration opportunities are scarce, urban unemployment is high, and poverty and inequality are intensifying. In Kiribati and elsewhere, international migration involves more complex scenarios. Urban populations are growing steadily, alongside a floating urban population characterized by informal economies and squatter settlements; hence, urbanization is a key risk factor. However, little work has been undertaken on the socioeconomic status of migrants in the growing informal settlements (Connell 2011); hence, clear conclusions on the basic geography and gender of both HIV and migration remain necessarily imprecise.

The Highlands Highway, Papua New Guinea

The HIV/AIDS epidemic in PNG has extended beyond urban areas to rural areas, where 80% of the population lives, and is clustered around concentrations of population, transport routes, and rural enclave enterprises where

there are active markets for the exchange and sale of sex (National AIDS Council PNG 2010b). This is primarily evident for the Highlands Highway. Indeed transport hubs, other than ports, that are centers of HIV transmission in other parts of the world are quite rare in the Pacific. The Highlands Highway serves as the major economic route for PNG, linking coastal ports in Morobe and Madang Provinces with destinations in the highlands and hinterlands. Immediately after its completion in the late 1960s, an epidemic of syphilis occurred in the Highlands, characterized as a direct by-product of the increased access afforded by the highway (Hughes 1997) and indicating that risky sexual behavior has been linked to and facilitated by new mobility for several decades.

Prostitution became significant along the Highlands Highway in the 1970s, with the growing presence of many *pasendia meri*, literally "a woman who will not stay put, either physically or sexually" (Wardlow 2006, 140), often escaping difficult marriages. Prostitution is a source of income for several hundred women seeking a living, where ties to traditional village life have weakened and income generating opportunities are few. More than 200 sex workers were identified in a survey in the 1990s along the Highlands Highway, whereas a sample of 211 self-identified female sex workers was drawn from just the Eastern Highlands province (EHP) in 2001 (Gare et al. 2005). This is the highest concentration of sex workers outside urban areas and implies several hundred more, so much so that the 700-km route has sometimes been called "the AIDS highway." Most of the women (71%) were from the EHP with 19% from the adjoining Simbu Province, and most (61%) lived in urban settlements in the two main towns. Most used alcohol and marijuana. More than half (54%) were divorced (Gare et al. 2005). At least in Tari (Southern Highlands), men who were drivers spoke freely about the extent of their sexual relations on the highway (Wardlow 2007, 1009). The Highlands Highway has provided a fast route for the virus to spread through PNG, and the high level of HIV and AIDS in the Western Highlands is a partial outcome of its presence.

Risky behavior characterizes the sex industry along the Highlands Highway. Of the 211 female sex workers, 74% had not used a condom in their last sexual act. The overall estimated rates for gonorrhea, chlamydia, syphilis, and trichomoniasis were 21%, 19%, 24%, and 51%, respectively. Seventy-four percent were positive for at least one STI, and 43% had multiple STIs. Of their clients, more than 12% were directly involved in transportation as drivers, but businessmen, office workers, and teachers were prominent occupational groups (Gare et al. 2005): the lesser MMMs. In a recent study, a sex worker in PNG explained: "I have nine men whom I used to go around with them. Among these nine men, six of them are top

shots" (Kelly et al. 2011). More generally, risky behavior characterizes the sexual activity of local youth, who regard HIV as of no great significance (Vaughan 2010).

Some 60–70% of truck drivers had paid for sex in the previous twelve months. Only a third (33%) of the truck drivers said they always used condoms with sex workers (National AIDS Council Secretariat Papua New Guinea and National HIV/AIDS Support Project 2007). Recent work in PNG highlights inconsistent condom use with one sex worker noting "When I say to use condom then they pay me 50 or 100 Kina and if they don't want to use condom, I charge them bigger amount" (Kelly et al 2011). Significantly, the Wagi Valley Transport Company was the first highlands trucking company (and a rare PNG company) to have an AIDS education program. The company recognized HIV education as an economic necessity after two of their twenty-two drivers died from AIDS. Australia's aid agency (AusAID) has also worked with the Department of Transportation in PNG to promote HIV awareness among transport workers and nongovernmental organizations have conducted HIV campaigns along the Highlands Highway including through the Trans-Sex project. Just as truck drivers play a significant role in the transmission of HIV in Africa and South Asia (Alam 2006; Morris and Ferguson 2007), in PNG they (and passenger motor vehicle drivers) are a high-risk group, almost certainly exhibiting similar patterns of HIV transmission. Indeed, the main national highway may be the principal locus of transmission in PNG.

Kiribati Seafarers

The seafaring industry is a significant source of employment for many men, and some women, in most countries but especially in Kiribati and Tuvalu. Both countries are distinctive in having long-established marine training schools producing workers for employment with overseas shipping lines. Kiribati, PNG, Fiji, Tuvalu, and to a lesser extent the Marshall Islands supply most of the region's approximately 6,000 to 7,000 seafarers (Oriente 2006; Buchanan-Aruwafu 2007). Tuvalu has 1,200 persons registered as seafarers or fishers, some 10% of the national population, and in Kiribati and Tuvalu, each seafarer supports an average of seven people (Dennis 2003). The number of seafarers has not increased significantly in recent years of global recession.

Beyond Pacific Island seafarers, thousands of overseas sailors and fishers pass through the region. About 10,000 seafarers, primarily from China, Korea, Indonesia, and Japan, move through Majuro each year, with an average nine-day stay (Oriente 2006, Blair 2005). Substantial numbers also

pass through Tarawa, to the extent that sex workers in Kiribati were once referred to as *Te Korekorea* (those who have sex with Korean seafarers) although that name has become unacceptable (Buchanan-Aruwafu 2007; McMillan and Worth 2010b). I-Kiribati sex workers characteristically have multiple sequential, seafarer partners. Their identity as sex workers renders them vulnerable to rape and sexual abuse from both some seafarers and local men, and their experiences of discrimination and stigmatization deter them from using HIV and STI testing and treatment services (McMillan and Worth 2010b). Characteristically seafarers spend little time in port, but when they do disembark, it is usually for several days. They dominate the clientele of the international sex work industry in the Pacific.

Seafarers are regarded as a priority area for HIV prevention in the Pacific. Seafarers travel widely including to high-prevalence parts of Asia and sub-Saharan Africa. Certain ports such as Bangkok and Seoul, and others in Central America, are favored as places where women (and alcohol) are cheaper than in Europe (Borovnik 2003; Buchanan-Aruwafu 2007). The first reported HIV infections in Fiji and Tuvalu were in seafarers. Of the 46 cases of HIV and AIDS in Kiribati as of December 2004, nineteen were among seafarers and their wives (Oriente 2006). Of the nine HIV infections in Tuvalu, all were among seafarers, their wives, and children (Global Fund 2007). Studies of 386 i-Kiribati seafarers in 2003 revealed very high rates of STIs with 28% having at least one STI although only one case of HIV was detected. Despite these high rates, less than 5% had ever been diagnosed suggesting a lack of awareness and action with regard to STIs (WHO, Ministry of Health, Kirbati, and University of New South Wales 2004). A later study among 304 i-Kiribati seafarers reported that 23% of seafarers had sex with a commercial sex partner in the past year, and only 22% used condoms consistently with these commercial sex partners. Around 6% had MSM sex, and only 66% had ever been tested for HIV. Only 17% were deemed to have correct and comprehensive knowledge of HIV. Despite various educational programs less than a quarter of the seamen used condoms, and less than half knew how HIV was spread, whereas seafarers tended to have higher numbers of sex partners per year than did other identifiable groups (Peteru 2002). Present knowledge, attitudes and practice represent problems. Some 65% of seafarers could not describe HIV and AIDS or how it is transmitted, and 50% did not know what an STI was. Most had received some HIV awareness training but could not remember the information. Seafarers under the age of 25, however, mostly provided informed responses suggesting that younger generations were more aware. Knowledge about condoms and how to use them is also poor among seafarers (Peteru 2002; Armstrong 1998; Borovnik 2003)

as is also true of the wider i-Kiribati population (UNICEF Pacific and the Government of Kiribati 2010). Cultural taboos exist against discussing sex and condom use, thus reducing opportunities for open discussion and learning, whereas suggesting using condoms with marital partners implies an unacceptable mistrust (Borovnik 2003). Comparative data on other national groups are unavailable.

A further combination of attitudes and behavior contribute to heightened HIV transmission risk. The seafaring lifestyle "allows for very low condom use, excessive alcohol consumption, multiple sex partners, group sex, commercial sex and the development and circulation of lore and misinformation on HIV. Furthermore, Pacific Island seafarers typically subscribe to the traditional gender roles and attitudes that remain dominant in the region, and are resistant to talking openly about sex and sexual health or negotiating safe sex with their partners" (Oriente 2006, 156). Alcohol use accompanies unsafe sex among seafarers and is a major barrier to increased use of condoms (Peteru 2002). Time in port is characterized as a time for heavy drinking and actively seeking entertainment and sexual activity. Indeed, the combination of alcohol and women for i-Kiribati seafarers effectively self-defined a "seaman's life" (Borovnik 2003). In response to questions regarding reasons for unsafe sex, "drinking too much alcohol" was the response given by approximately 80% of seafarers from Tuvalu, Kiribati, and Fiji; some 85% of seafarers drink alcohol (Dennis 2003; WHO, Ministry of Health, Kirbati, and University of New South Wales 2004). Monotony, boredom, and long absences from home stimulate sexual activity. Women are brought on board ships simultaneously, a situation that leads to sharing. About half of all seafarers literally seek a "woman in every port," some remaining with the same woman for several days (Peteru 2002). Forty-seven percent of seafarers aged between seventeen and thirty-five had two or more sex partners in the previous twelve months with 14% having more than five. Among seafarers older than 35, some 29% had more than five sexual partners in the previous year. A high number of partners is accompanied by inconsistent condom use. Only 20% of those with two or more sex partners over the past twelve months claimed to always use condoms (Peteru 2002). However, although those under thirty-five tended to have fewer partners and to be more aware of HIV and the need for condom use, 25% of seafarers had experienced at least one STI in the past twelve months (Peteru 2002). Knowledge was not translated into practice.

Seafarers themselves recognize that sex workers are easily accessible in Pacific ports with American Samoa, Fiji, French Polynesia, Guam, Nauru, New Caledonia, PNG, Samoa, and Tonga all explicitly mentioned. The use of sex workers by seafarers is often characterized by longer-term relationships consisting of total time in port rather than a single night (Peteru 2002)

as it is in Tarawa (McMillan and Worth 2010b; UNICEF Pacific and the Government of Kiribati 2010). A woman in Kiribati characterizes her relationship with seafarers; thus, "We enjoy staying on the boat doing nothing. We sleep, wake up and eat. We move around on the boat visiting our girlfriends. We have no problems with our partners and the rest of the crew. We seem to know each other very well and usually tease each other. We are given money from our partners when they get their pay, if they don't get paid we don't receive any" (McMillan and Worth 2010b). Such relationships have similarities with the concurrent partnerships of southern Africa that are the major cause of high levels of transmission in that region (Halperin and Epstein 2007). The extent of HIV prevalence amongst seafarers has resulted in many regional and international organizations becoming involved in various intervention activities. The Trans-Sex project in PNG trained sailors to become peer HIV educators and the Asian Development Bank–funded Coastal Fisheries Management Development Project in PNG supported HIV education. However, low levels of literacy among seafarers has limited their access to many information sources (Dennis 2003; Oriente 2006; Connell and Negin 2010). Mobility, in every context, both contributes to HIV/AIDS and challenges effective educational programs.

Conclusion: The Costs of Modernity?

Migration and mobility are global influences on the distribution and spread of HIV. This is increasingly evident in the Pacific; towns and ports are critical nodes, as are growing urban settlements within them, where poverty prevails. Size and cosmopolitanism enhance anonymity and social disorganization. The high level of HIV in PNG points to the significance of internal migration (including to logging camps and mines) and urbanization as critical influences and risk factors and suggests that an increasing prevalence may occur in such rapidly growing urban areas as Honiara, Port Vila, and Suva, where international migration opportunities are scarce, urban unemployment is high, and poverty and inequality are intensifying. In Kiribati and elsewhere, international migration involves more complex scenarios.

Only the distinctive presence of a large number of seafarers, various resource enclaves (mines and logging camps), and the key role of ports distinguish the Pacific from other parts of the world, but the growing significance of urbanization has reduced that distinctiveness. As elsewhere, it is not travel that is a vector for HIV but rather the behavior of migrants and travellers. Migrants consistently engage in more risky behavior than

nonmigrants whether in the Pacific or elsewhere (Nunn et al. 1995; Lagarde et al. 2003), partly because of the increased freedom to express sexual identities (Carrillo 2010), the structural disadvantages that inhibit the formation of protective social relationships, and emerging opportunities as inequality increases. Perhaps unsurprisingly in several parts of rural PNG, and elsewhere in the region, HIV is seen as a "foreign disease" contracted by people moving away from their home areas and transmitted by returning there or by the arrival of others (Wilde 2007; Beer 2008; Dundon 2010). "Single in town, married in the village" is not merely an African phrase (Hammar 2010, 17). Ironically, driven by lack of financial support, loneliness, and other factors, those who stay behind may also engage in higher levels of risky behavior, and levels of HIV may be elevated in rural areas among those who are less mobile. In PNG "'High-risk' persons are ... assumed to be so because they are highly mobile and residentially transient, such as ... miners, soldiers and transportation workers.... The assumption seems to be that home is a haven in a heartless world and safe from sexually transmitted disease" (Hammar 2010, 47). Men who move between towns and villages "are increasingly talked about as representing a significant threat to the health and well-being of those who remain at home" (Dundon 2010, 182). Partners at home, however, may be unable to negotiate condom use with a long-term partner and experience financial inequity within the household as well as his or her own risk behavior while the partner is away. Women especially have limited power to protect themselves against HIV.

The three contexts discussed here are only some of many Pacific economic and cultural contexts. Mobility is increasing although adequate statistical data on migration, mobility, and risk behavior are generally lacking (Connell and Negin 2010). A growing number, diversity, and fluidity of mobile groups, including mine workers, the military, bureaucrats, refugees, and students, are at particular risk of HIV infection, usually because of similar detachment from home, weak social control, and income availability. A significant migration stream in this century has been that of military and security workers, almost all men, to the Gulf, especially from Fiji and Tonga, American Samoa, and Micronesia (Maclellan 2007). Expanding oil palm estates are attracting new migrant workers; in West New Britain, PNG, sex workers are present on pay days for smallholders and plantation workers. In Western Province, PNG, sex workers live close to logging camps (Wilde 2007), and workers in logging camps are regarded as having a high incidence of HIV (Buchanan-Aruwafu 2007; Dundon and Wilde 2007). Mine workers, again mainly in PNG, are particularly at risk, with sex workers moving to mining centers. The fastest growing HIV epidemic in the nearby province of West Papua, Indonesia, is at Timika,

the mining town for the giant Freeport mine, where poverty, poor health, migration, and unemployment co-exist (Eves and Butt 2008). The massive liquefied natural gas project being developed in the Southern Highlands of PNG has created another potential scenario for employee and sex worker migration.

There is an emerging nexus between those with little money (e.g., students and the urban, and some rural, poor), the emerging presence of MMMs, and the contemporary incidence of HIV. Those who are more mobile and able to travel internally and internationally have more disposable income. Wealth enables more sexual partners and is associated with mobility, time, and the resources to maintain multiple or concurrent partnerships; indeed "wealth and social interaction are inextricably linked" (Shelton, Cassell, and Adetunji 2005). Seafarers, soldiers, bureaucrats, truck drivers, and migrant laborers in mines and plantations are both a labor aristocracy and MMMs. It is rarely the poorest but those who have some degree of economic support who are more mobile.

By contrast, sex work has tended to emerge from poverty and inequality where females have few alternative income sources and lack social support, at a partner and extended household level and within a wider community, as urban "safety nets" break down in contexts of high unemployment. Earnings from sex work are relatively high. Urban youth especially have become more vulnerable to both poverty and risky behavior, as in Kiribati, because of "poverty, homelessness, sexual violence, incest, lack of community and family support, being away from home, being out of school, single mothers, pregnant teens and having STIs" (UNICEF Pacific and the Government of Kiribati 2010, 51). Likewise some urban women in PNG are "buffeted by misogyny, exploitation, the difficulties of accessing education, youth unemployment, appalling health services and one of the most inequitable and corrupt distributions of wealth" alongside the economic expectations of kin and others (Reid 2010, 320). Poverty and affluence, inequality, migration, disconnected identities, unemployment, and high-risk sexual behavior coincide in urban areas, disrupt marital relations, and are critical factors in the rise of sex work and HIV transmission. Poverty engenders vulnerability, enhances gender inequalities and increases risk factors, an outcome well established elsewhere (Rodrigo and Rajapakse 2010). Quite simply, as in West Papua, "exploitative relationships are fuelled by a growing economy" (Morin 2008, 58). The ambiguity and unevenness of modernity ensures that towns are hybrid and dichotomous places of success and failure, where affluence is juxtaposed with poverty, success with failure, autonomy and agency with pressure and control, opportunity with disappointment, all fraught with the insecurity and tensions that are produced from disjuncture with past times and geographies.

The lack of specific data on the sexual behavior and risk factors of migrant groups in the Pacific, especially outside PNG, makes the development of firmer conclusions difficult. More research is needed to determine levels of risk and the factors that drive decision making of mobility and sexual behavior, especially outside PNG. Relatively little research has been done on the vulnerability of family members of migrants and mobile workers. Additional research on issues of economic and social vulnerability that follow migration are required to develop a more holistic understanding of relevant challenges. At this stage, the challenge facing the Pacific's complex social, economic, epidemiological, and behavioral context is to integrate the dual challenges of HIV vulnerability and increasingly complex mobility decision making to develop appropriate and targeted interventions.

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