Supplementary Materials: HIV, Other Blood-Borne Viruses and Sexually Transmitted Infections amongst Expatriates and Travellers to Low- and Middle-Income Countries: A Systematic Review

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Table S1. Data Extraction Summary.

Author/Purpose	Origin/Destination of Travel	Study Details	Sample/Response	Reported Outcomes
Alcedo et al. (2014) [1] To analyse factors associated with risky sexual behaviour among travellers	**Origin:** North America, Europe **Destination:** Varied across North America, Africa, Latin America and/or the Caribbean, Europe, Asia, Oceania	**Design/Method:** Cross-sectional; online questionnaire. **Participants/Recruitment:** Males and female; aged 18–35 years; recruited via Couchsurfing website.	**Sample:** *n* = 468 **Response rate:** 78%	• Sex during last travel • Characteristics of sexual behavior • Condom use
Angelin et al. (2014) [2] To determine relevance of and adherence to health advice given to travellers to lower levels of travel-related illness	**Origin:** Sweden **Destination:** Varied across Asia, Africa, South America	**Design/Method:** Prospective, cross-sectional; pre- and post-travel questionnaire. **Participants/Recruitment:** Male and female; 18 years or older; Swedish speaking travelers attending a travel clinic.	**Sample:** *n* = 1277 (pre) *n* = 1059 (post) **Response rate:** 83%	• Perceptions of health advice • Compliance with health advice • Travel-related illness • Risk behaviors while overseas
Ansart et al. (2009) [3] To identify and evaluate STIs diagnosed among travellers consulting the health unit after returning from the tropics	**Origin:** France **Destination:** Varied across America, Caribbean, Asia, Africa, Oceania	**Design/Method:** Cross-sectional; prospective; analysis of patient data. **Participants/Recruitment:** Male and female; 18–49 years; returning travelers attending a travel clinic with signs of STIs.	**Sample:** *n* = 49 **Response rate:** 83%	• Signs indicative of STIs • HIV status • Sexual behavior • Condom use
Bauer (2007) [4] To explore tourists' and locals' knowledge, attitudes, and reasoning for engaging in casual sexual relationships	**Origin:** Varied across U.S., UK, Germany, Netherlands, Australia **Destination:** Peru	**Design/Method:** Qualitative; in-depth, unstructured interviews; informal conversations; participant and non-participant observation. **Participants/Recruitment:** Male and female; 19 years and older; locals linked to tourism or travelers for tourism, language courses or volunteer work recruited via convenience and snowball sampling.	**Sample:** *n* = 23 **Response rate:** Not Recorded	• Relationship type • Sexual behavior • Condom use • Safe sex knowledge/education
Bhatta et al. (2009) [5] To identify common health problems encountered by VSO volunteers during placement and after returning home	**Origin:** UK **Destination:** Varied across North Africa, sub-Saharan Africa, Asia, Oceania, South America	**Design/Method:** Cross-sectional; self-complete post travel questionnaire. **Participants/Recruitment:** Male and female; all ages; returned voluntary service overseas workers sent questionnaire and information pack on resettlement; completed anonymously, returned by mail.	**Sample:** *n* = 219 **Response rate:** 36%	• Demographics • Pre-existing health conditions • Illness suffered while on placement • Illness upon return from volunteering

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Boggild et al. (2014) [6] To identify the spectrum of illnesses experienced by Canadians travelling abroad	**Origin:** Canada **Destination:** Varied across India, Mexico, Cuba, Dominican Republic, Costa Rica, U.S., Ghana, Thailand, Peru, China	**Design/Method:** Analysis of retrospective surveillance data of ill returned travelers from GeoSentinel database. **Participants/Recruitment:** Male and female; all ages; returned travelers with probable/confirmed diagnoses, diagnosed at Canadian GeoSentinel clinics.	**Sample:** *n* = 4365 *n* = 3943 ill returned travelers **Response rate:** Not Applicable	• Demographics • Destinations of travel • Travel purpose • STI diagnosis • Pre-travel health advice
Brown et al. (2012) [7] **Brown et al. (2014) [8]** To explore risk perspectives and experiences of Australian men who acquired HIV while travelling overseas	**Origin:** Australia **Destination:** Varied across Asia, Africa, North America	**Design/Method:** Grounded Theory; semi structured interviews; symbolic interaction as theoretical perspective and analytical framework. **Participants/Recruitment:** Males; 20 years and older; travelers who believed they had acquired HIV overseas between the years 2000–2009; recruited via through services accessed by people living with HIV, particularly AIDS Councils and hospitals. Majority of interviews face-to-face, but also online and telephone.	**Sample:** *n* = 14 **Response rate:** Not Recorded	• Destination, reason for travel • Meaning ascribed to home and destination • Knowledge of HIV • Reported mode of HIV transmission • Participant experience overseas-knowledge/attitudes/values
Cabada et al. (2002) [9] To identify sexual behaviour and risk factors of travellers from the US and Europe to Peru	**Origin:** U.S., England, France **Destination:** Peru	**Design/Method:** Cross-sectional; self-complete questionnaire. **Recruitment:** Male and female travelers aged 15–51 years; departing from Peru on flights to the U.S. or Europe; convenience sampling in international departures lounge at airport.	**Sample:** *n* = 442 **Response rate:** 87%	• Sexual behavior • Sexual expectations while travelling • Condom use • Sex partners while travelling
Cabada et al. (2003) [10] To identify sexual behaviour and risk factors for STIs among travellers and locals interacting with travellers in Peru	**Origin:** U.S., England, France **Destination:** Peru	**Design/Method:** Cross-sectional; self-complete questionnaire. **Participants/Recruitment:** Male and female; 15–50 years; travellers; convenience sampling at airport and main bus stations prior to departure.	**Sample:** *n* = 2540 **Response rate:** 79.2%	• Demographics • Sexual behavior • Condom use • Pre-travel health advice
Collins et al. (2009) [11] To explore lived experiences of transnational mobility for gay-identified expatriates who reside in Manila	**Origin:** Varied across U.S., Great Britain, Germany, Scotland, Ireland, Sweden **Destination:** Philippines	**Design/Method:** Ethnography; in-depth, informal field interviews. **Participants/Recruitment:** male; gay; 29–70 years; expatriates; recruited at gay bars in Malate.	**Sample:** *n* = 8 **Response rate:** Not Recorded	• Experiences of gender, sexuality, nationality, race and mobility
Combs and Giele (2009) [12] To analyse heterosexually acquired HIV cases observed among non-Aboriginal WA residents	**Origin:** Australia **Destination:** Varied across Europe, Southeast Asia, sub-Saharan Africa	**Design/Method:** Descriptive, retrospective, cross sectional**;** analysis of Department of Health data of those newly diagnosed from 2002–2006. **Participants/Recruitment:** Male and female; all ages; non-Aboriginal residents who had lived or intended to live in Western Australia.	**Sample:** *n* = 258 **Response rate:** Not Applicable	• Demographics • Country of origin • Reported place of HIV acquisition • HIV exposure categories

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Croughs et al. (2008) [13] To determine degree to which Dutch travellers receiving travel clinic pre-travel advice have protected or unprotected sexual contact with new partners and factors influencing this behaviour	**Origin:** Netherlands and Belgium **Destination:** Varied across sub-Saharan Africa, Asia, Turkey, South America, Central America, North Africa	**Design/Method:** Cross-sectional; self-complete questionnaire. **Participants/Recruitment:** Male and female; 18–50 years; travelers; Dutch speaking; questionnaire sent to travelers within 6 weeks of visiting a pre-travel clinic, followed by reminder.	**Sample:** n = 1907 **Response rate:** 55%	• Demographics • Sexual behavior of travelers • Condom use
Dahlgren et al. (2009) [14] To assess self-reported health risk and risk-taking behaviours of humanitarian expatriates	**Origin:** Primarily Europe, America **Destination:** Primarily Africa, Asia	**Design/Method:** Cross-sectional; self-administered questionnaire. **Participants/Recruitment:** Male and female; all ages; humanitarian aid workers who had been on an ICRC mission for at least 1 month; contacted and asked to complete a questionnaire.	**Sample:** n = 1190 **Response rate:** 95.2%	• Demographics • Health status • Health related problems of workers • Risk-taking behaviors
Fenton et al. (2001) [15] To determine extent to which black African communities residing in London visit countries of birth, and the associated factors of acquiring new sexual partners while overseas	**Origin:** UK **Destination:** Democratic Republic of Congo, Kenya, Uganda, Zambia, Zimbabwe	**Design/Method:** Cross-sectional self-complete questionnaire. **Participants/Recruitment:** Male and females; all ages; from Sub-Saharan Africa residing in London; recruited at social and commercial venues, such as churches, universities, embassies, and bars in London using ethnically matched interviewers.	**Sample:** n = 756 **Response rate:** 75.6%	• Demographics • Condom use • previous diagnosis with ST • Number of sex partners • HIV testing • Perceived peer group norms
Hamer et al. (2008) [16] To evaluate use of pre-travel medical services, current knowledge, and behaviour among expatriate corporate workers stationed in Ghana	**Origin:** North America, UK, Europe, other high income countries **Destination:** Western Ghana	**Design/Method:** Cross-sectional self-complete questionnaire. **Participants/Recruitment:** Male and female; 21 years or older; corporate expatriate employees; field medical officer distributed questionnaire to all relevant expatriate employees.	**Sample:** n = 42 **Response rate:** 70%	• Demographics • Pre-travel medical services • Knowledge, behavior regarding a range of diseases and infections, alcohol use, high-risk sexual activity
Kaehler et al. (2013) [17] To determine sexual behaviour and attitudes among foreign backpackers in Thailand	**Origin:** Europe, North America, Australia **Destination:** Thailand	**Design/Method:** Cross-sectional self-complete questionnaire. **Participants/Recruitment:** Male and female; 18 years and older; English-speaking backpackers without a spouse; using convenience sampling, participants approached in backpacker center in Bangkok.	**Sample:** n = 415 **Response rate:** Not Recorded	• Demographics • Pre-travel preparations • Sexual risk behaviors • Condom use • Selection of sex partners

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Author/Purpose	Origin/Destination of Travel	Study Details	Sample/Response	Reported Outcomes
Manieri et al. (2013) [18] To investigate sexual risk-behaviour of Swedish men who have sex with sex workers in Thailand	**Origin:** Sweden **Destination:** Thailand	**Design/Method:** Cross-sectional self-administered questionnaire. **Participants/Recruitment:** Male; all ages; Swedish citizens; recruited by male interviewers in the streets or inside bars and restaurants of the red-light districts of Pattaya and Bangkok.	**Sample:** *n* = 158 **Response rate:** 65%	• Demographics • Experience with sex workers • Intention to user Thai sex workers • Condom use and perceived risk
Matteelli et al. (2013) [19] To describe the range of diseases and factors associated with acquisition of travel-related STIs via the GeoSentinel database	**Origin:** Varied **Destination:** Varied across Asia, Africa, America, America, Caribbean, Europe, Middle East, Oceania	**Design/Method:** Observational, cross-sectional; using standardized questionnaire to analyze diagnosed cases from GeoSentinel database. **Participants/Recruitment:** Male and female; 13–90 years; crossed international borders within 10 years; confirmed/probable diagnoses	**Sample:** *n* = 112,180 **Response rate:** Not Applicable	• Demographics • Travel history and reason for travel • Pre-travel consultation • STI diagnoses
Mercer et al. (2007) [20] To determine the proportion of British residents who reported new sexual partners overseas in the past 5 years and the associated demographic, behavioural and attitudinal outcomes	**Origin:** UK **Destination:** Varied across Europe, UK, Oceania, America, Caribbean, Asia, Middle-East, sub-Saharan Africa	**Design/Method:** Stratified national survey using multistage probability cluster design; face-to-face interviews using computer-assisted personal interviewing in respondents' homes, followed by computer-assisted self-interview. **Participants/Recruitment:** Male and female; 16–44 years; travelers; British residents. A sample of addresses selected. For every selected household, one resident randomly selected to participate. Ethnic boost sample obtained with stratified postcode sampling.	**Sample:** *n* = 11,161 **Response rate:** main survey = 65.4%; ethnic boost sample = 63%	• Socio-demographics • Health status, general risk factors • Attitudes and knowledge of HIV • Sexual attraction and experience • Overseas travel • Number of sex partners overseas • Overseas sex partner demographics
Rice et al. (2012) [21] To determine the characteristics of travellers born in the UK who acquire HIV infection overseas	**Origin:** UK **Destination:** Spain, Nigeria, South Africa, Zimbabwe, USA, Jamaica, Thailand, other	**Design/Method:** Retrospective descriptive analysis; using case reports and follow-up data from national HIV database. **Participants/Recruitment:** Male and female; 15 years and older; diagnosed with HIV infection in the UK; likely acquired HIV overseas.	**Sample:** *n* = 15,997 **Response rate:** Not Applicable	• Demographics • Reported route of HIV transmission and country of infection
Streeton and Zwar (2006) [22] To determine risk for hepatitis B exposure while travelling overseas for Australian travellers	**Origin:** Australia **Destination:** Varied across Africa, Asia, Middle East, South and Central America, Europe, Oceania	**Design/Method:** Cross-sectional telephone survey. **Participants/Recruitment:** Male and female; 18 years and older; had travelled overseas in the past two years, either for pleasure or business; recruited randomly via telephone calls to potential participants from each Australian mainland capital city using screening questions.	**Sample:** *n* = 503 **Response rate:** 74%	• Demographics • Travel history • Pre-travel health advice • Uptake, adherence to pre-travel immunization • Risks exposed to while travelling • Perceptions, knowledge of hepatitis B

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Author/Purpose	Origin/Destination of Travel	Study Details	Sample/Response	Reported Outcomes
Whelan et al. (2013) [23] To determine the casual sexual relationships and condom use consistency among Dutch, long-term travellers to (sub) tropical regions	**Origin:** Primarily the Netherlands **Destination:** sub-Saharan Africa, Central America, Caribbean, South America, Asia	**Design/Method:** Cross-sectional pre- and post-travel survey, pre- and post-travel blood sampling. **Participants/Recruitment:** Male and female; 18 years and older; immunocompetent; travelers to (sub) tropical regions for at least 3–12 months; recruited via Public Health Service travel clinic.	**Sample:** n = 552 **Response rate:** Not Recorded	• Demographics • Travel duration, destination, purpose • Number, type, sex, ethnicity of sex partners • Condom use • HIV status
Yokota (2006) [24] To explore reasons heterosexual male Japanese tourists engage in commercial sex in Thailand, and how motivations differ to those of Caucasian male tourists	**Origin:** Japan **Destination:** Thailand	**Design/Method:** Qualitative semi-structured, in-depth interviews. **Participants/Recruitment:** Male; 19–36 years; heterosexual; tourists; had sex with Thai sex worker(s) and who were travelling without partners; purposive sampling used to recruit participants in guesthouse lobbies.	**Sample:** n = 34 **Response rate:** 88%	• Demographics • Sex with and history of commercial sex with Thai sex workers • Condom use with Thai sex workers • Reasons to buy sex from Thai sex workers
Zuckerman and Steffen (2000) [25] To determine risks of hepatitis B infection among European travellers compared with immunisation status in other risk groups	**Origin:** Austria, Belgium, France, Germany, Italy, Netherlands, Sweden, Switzerland, UK **Destination:** Varied-Primarily Africa, Asia, Central or South America	**Design/Method:** Cross sectional survey using telephone interviews with mostly closed questions (translated for all participants). **Participants/Recruitment:** Male and female; 18 years and older; travelers; randomly sampled from telephone directories, using quotas.	**Sample:** n = 9008 **Response rate:** Not Recorded	• Demographics • Travel destination (by endemicity) • Risk behaviors • Hepatitis vaccination status • Knowledge
Zuckerman and Hoet (2008) [26] To determine European travellers' risk for exposure and immunisation status of hepatitis B while travelling	**Origin:** Belgium, Italy, Finland, Germany, Netherlands, Spain, Sweden, UK **Destination**: Varied across Africa, Asia, South America, Eastern Europe	**Design/Method:** Cross-sectional two-stage survey: (1) telephone Omnibus survey and (2) online survey. **Participants/Recruitment:** Male and female; 18 years and older; travelers; to hepatitis B endemic countries; Omnibus survey participants chosen through random digit dialing used as quotas for participation in the online survey; Online survey participants recruited through online panel.	**Sample:** n = 5948 (Omnibus survey) n = 4151 travelers (online survey) **Response rate:** Not Recorded	• Demographics • Travel frequency, purpose, destination • Self-reported hepatitis B immunization status before travel • Risk exposure to hepatitis B • Pre-travel health advice

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