

The provision of sexual and reproductive health information and services to travellers: an exploratory survey of Australian travel medicine clinicians

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ABSTRACT

Background. International travel can increase the risk of exposure to infectious diseases including sexually transmissible infections (STI). Pre-travel medical consultation provides an opportunity for travel-related health risk assessments and advice. This study explored how travel medicine clinicians integrate sexual and reproductive health (SRH) services into clinical practice. **Methods.** A convenience sample of travel medicine clinicians completed a cross-sectional survey online or via hard-copy disseminated at an annual national Australian travel medicine conference. **Results.** Of the 67 respondents, most ($n, 51; 76.1\%$) had a postgraduate qualification relevant to travel medicine and 55.2% ($n, 37$) had worked in travel medicine for over 10 years. Only 22.4% ($n, 15$) reported conducting a SRH history/STI risk assessment for all travel patients. STI testing pre-departure was conducted on patient request (48, 71.6%), if symptomatic (32, 47.8%) or based on risk history (28, 41.8%). SRH information pre-departure was most frequently provided if prompted by patient questions ($n, 42; 62.7\%$), or based on the patient's history ($n, 37; 55.2\%$). Over half the sample ($n, 40; 59.7\%$) expressed interest in further training in SRH. **Conclusion.** Providing and engaging with additional training may assist travel medicine clinicians to take a more proactive approach to SRH consultations and STI testing. Additional research is needed to explore models of care that will allow comprehensive SRH and STI services to be integrated into standard pre- and post-travel care.

Keywords: blood-borne virus, post-exposure prophylaxis, pre-exposure prophylaxis, pre-travel consultation, prevention, sexual and reproductive health, sexually transmitted infection, travel medicine.

Background

International travel has vastly increased the opportunity for individuals to develop new professional, social, and sexual networks.¹ However, overseas travel can also increase risk of exposure to infectious diseases.² Pre-travel consultation provides an opportunity for travel-related health risk assessments, advice and/or vaccinations,^{3,4} typically administered by general practitioners or specialist travel clinics. An awareness of potential health risks (e.g. sexually transmitted infections, STI) may increase the likelihood travellers will engage in preventative behaviours.⁵ However, it is estimated that only a third of travellers seek pre-travel healthcare advice.⁶

International travel can contribute to short-term changes in sexual practices and has been associated with the global spread of STIs and blood-borne viruses (BBV).^{1,7-9} STI risk among travellers engaging in casual sex can be three times higher compared to casual sex within their home country, with purpose and destination of travel influencing risk behaviours and risk of acquisition (e.g. if planning to engage in casual sex and/or travelling to a high STI/HIV prevalence setting).¹⁰⁻¹⁵ Additionally, self-reported rates of condom use among long- and short-term travellers engaging in casual sex is low,^{10,16-18}

increasing the risk of onward STI/BBV transmission and presenting significant public health challenges within origin and destination countries.

Despite limited information regarding the efficacy of pre-travel sexual health interventions, the inclusion of sexual health in pre-travel consultations can be effective in mitigating sexual risk behaviours and risk of STI/BBV acquisition.^{13,14} Under current Australian prescribing guidelines, for people intending to have sex while travelling, pre-exposure prophylaxis (PrEP) for HIV can be appropriately prescribed by a clinician as either daily or on-demand dosing to align with their travel schedule.¹⁹ This capacity optimises the role of practitioners acting as a 'front-line' in delivering sexual and reproductive health (SRH) to travellers and should be considered an important component of any holistic travel healthcare.

Previous studies have found that STI/BBV counselling and condom information were included in less than half of pre-travel consults.^{14,20–22} Nonetheless, data on the extent to which health practitioners are providing clients with sufficient information about SRH, STI/BBV and protective behaviours is limited, as is evidence on strategies to increase clinicians' capacity to provide pre-travel advice and health promotion related to SRH. Increasing the capacity and capability to deliver these critical health promotion services therefore requires a timely assessment of current clinical practice. This work aims to understand four key gaps in understanding: (1) how clinicians determine SRH risk; (2) their approaches to STI testing; (3) what content they include in SRH consultations; and (4) what areas of interest are important for future training.

Materials and methods

Participants and recruitment

Recruitment targeted clinicians (e.g. doctors, nurses) practising in dedicated travel medicine clinics or general practice who were currently involved in provision of travel medicine. Study inclusion targeted clinicians practising only in Australia. Individuals interested in travel medicine but not currently practising (e.g. research academics) were excluded. Recruitment was conducted via purposive (through targeted emails) dissemination through an Australian professional network specialising in travel medicine, and face-to-face at the 2022 Southern Cross Tropical and Travel Medicine Conference in Brisbane, Australia. The recruitment period was between August and December 2022. Ethical approval for this study was obtained from The University of Queensland (2022/HE000688).

Survey development and dissemination

This cross-sectional study used a structured survey, developed by a team of researchers, community service providers and travel medicine clinicians in Queensland, Australia.

Participants accessing the survey digitally did so via a weblink or QR code, while hard copies were also available at an annual national travel medicine conference. An initial open-ended survey was designed and piloted within the research team, which included travel medicine clinicians. Results of the pilot testing reduced the survey down to a final 26 items, of which most were closed-ended questions (see Supplementary material for full survey). Items related to the assessment of SRH risk, STI testing, SRH advice and counselling offered, and areas for future professional development in relation to sexual health and pre- and post-travel were explored. Participants were able to provide multiple responses to each survey item based on their practices. Participation was anonymous and voluntary with no monetary reward for study completion.

Data analysis

Data were cleaned in SPSS²³ (ver. 27; IBM, 2020) software before being transferred to Stata Statistical Software: Release 17 for descriptive analyses.²⁴ Descriptive analyses were conducted to assess the frequency and extent to which proportion of SRH and STI/BBV information and screening was conducted by health care providers.

Results

A total of 78 responses were collected, of which 67 were eligible for inclusion based on occupation relevant to travel medicine and practice in Australia. Twenty-three eligible respondents were recruited via email (from a total of 71 members of the Travel Medicine Alliance), while the remaining 44 eligible surveys (from a total population of 75 attendees to a Travel Medicine conference in Brisbane, Queensland) were completed as hard copies.

Most respondents were aged between 40 and 69 years (n , 56; 83.6%), identified as female (n , 41; 61.2%), were doctors (n , 50; 74.6%), or reported working in general practice (n , 41; 61.2%). Most (n , 51; 76.1%) had a postgraduate qualification relevant to travel medicine and more than half were members of the International Society of Travel Medicine (ISTM) (n , 39; 58.2%) and had worked in travel medicine for over 10 years (n , 37; 55.2%). Participant demographics are in [Table 1](#).

Determining risk

Determining patients' risk of acquiring an STI while travelling was predominantly guided by clinician assumptions about the patient and their travel context. Purpose of travel (n , 44; 65.7%), identified risk behaviour (n , 40; 59.7%), patient age (n , 38; 56.7%), and country of travel (n , 20; 43.4%) contributed to this assessment. Only a small portion of participants reported conducting a sexual history/STI risk assessment

Table 1. Participant demographics ($n = 67$).

	<i>n</i>	%
Age (years)		
30–39	5	7.5
40–49	19	28.4
50–59	19	28.4
60–69	18	26.9
70–79	3	4.5
Missing	3	4.5
Gender		
Male	25	37.3
Female	41	61.2
Non-binary	0	0.0
I use a different term	0	0.0
Prefer not to answer	0	0.0
Missing	1	1.5
Practice location (state)		
New South Wales	7	10.4
Victoria	12	17.9
Queensland	15	22.4
Western Australia	2	3.0
Australian Capital Territory	3	4.5
South Australia	1	1.5
Tasmania	1	1.5
Northern Territory	0	0.0
Unsure	1	1.5
Missing	7	10.4
Practice (multiple answers)		
Dedicated travel medicine clinic	18	26.9
General Practice	41	61.2
Hospital-based clinic	4	6.0
Other (please specify)	11	16.4
Role		
Doctor	50	74.6
Nurse practitioner	1	1.5
Registered nurse	14	20.9
Public health physician	1	1.5
Other	1	1.5
International Society of Travel Medicine member		
Yes	39	58.2
No	25	37.3
Missing	3	4.5
College or Professional Association member		
No	3	4.5
ANZSOM	1	1.5

(Continued on next column)

Table 1. (Continued).

	<i>n</i>	%
Australian College of Nursing	1	1.5
RACGP	9	13.4
Royal College of Physicians and Surgeons	1	1.5
Missing	54	80.6
Years in practising in medicine/nursing		
0–9 years	3	4.5
10–19 years	12	17.9
20–29 years	17	25.4
30–39 years	21	31.3
40–49 years	7	10.4
Missing	7	10.4
Years involved in travel medicine		
<1 year	2	3.0
1–9 years	22	32.8
10–19 years	21	31.3
20–29 years	12	17.9
30–39 years	4	6.0
Missing	6	9.0
Qualifications		
ISTM Certificate of Knowledge	34	50.7
Master of Public Health	6	9.0
Master of Public Health/Tropical Medicine	8	11.9
Monash Travel Medicine Course	4	6.0
Diploma Travel Medicine	7	10.4
Other	9	13.4

ANZSOM, Australian and New Zealand Society of Occupational Medicine; RACGP, Royal Australian College of General Practitioners, ISTM, International Society of Travel Medicine.

on every patient ($n, 15; 22.4\%$). See [Table 2](#) for an overview of risk assessment factors.

Testing for STI

Pre-travel and post-travel STI testing appeared to be rarely instigated by a clinician without an explicit prompt, such as a patient's request (pre-travel: $n, 48; 71.6\%$; post-travel: $n, 48; 71.6\%$) or the presence of physical symptoms (pre-travel: $n, 32; 47.8\%$; post-travel: $n, 46; 68.7\%$). While risk history was also a common reason for providing a test (pre-travel: $n, 28, 41\%$; post-travel: $n, 27; 40.3\%$), previous results indicated that few clinicians always conducted these assessments on every patient ($n, 15; 22.4\%$). Further information on testing is in [Table 2](#).

While useful in determining risk, cognitive biases and assumptions appear to be less useful in determining whether an STI test is ordered. For example, age and purpose of travel

Table 2. Sexual and reproductive health (SRH) and sexually transmissible infections (STI) practices among Australian travel medicine clinicians ($n = 67$).

	n	%
On what basis would you decide whether a patient was at risk for STI?		
Purpose of travel	44	65.7
Identified risk behaviour	40	59.7
Age	38	56.7
Country travelling to or from	29	43.3
HIV status	16	23.9
I conduct a sexual history/STI risk assessment on every patient	15	22.4
Other (e.g. if travelling alone/with friends/group tour with young people)	13	19.4
Only if they raise the issue first	10	14.9
Do not assess STI risk	1	1.5
Ethnicity	0	0.0
On what basis do you offer STI testing to your patients prior to departure?		
If the patient requested	48	71.6
If they were symptomatic	32	47.8
The patient's risk history	28	41.8
Based on discussion regarding contraception	18	26.9
Nature of travel (e.g. work, study, leisure)	11	16.4
The patient's age (e.g. young people under 30 years)	8	11.9
If the patient is travelling to high-risk country	7	10.4
I never offer STI testing to my travel patients prior to departure	7	10.4
Other (e.g. if inserting LARC, advice given only)	4	6.0
I offer an STI test to every travel patient prior to departure	1	1.5
Only if the patient is single (not in a relationship)	1	1.5
On what basis do you offer STI testing to travel patients on their return from international travel?		
If the patient requested	48	71.6
If they were symptomatic	46	68.7
The patient's risk history	27	40.3
I do not see returning travellers	12	17.9
The patient's age (e.g. young people under 30 years)	12	17.9
Nature of travel (e.g. work, study, leisure)	12	17.9
Other	4	6.0
Only if they had been to a high-risk country	2	3.0
I would not offer STI testing	1	1.5
Only if they had a STI test before they left	1	1.5
When conducting an asymptomatic STI screen, which of the following tests would you order/offer?		
Urine	51	76.1
Blood test	46	68.7
Cervical/high vaginal swab	23	34.3
Rectal swab	20	29.9

(Continued on next column)

Table 2. (Continued).

	n	%
Pharyngeal swab	18	26.9
Which infections would you test for as part of an asymptomatic screen?		
Chlamydia	54	80.6
Gonorrhoea	51	76.1
Human immunodeficiency virus (HIV)	51	76.1
Syphilis	47	70.1
Hepatitis B Virus (HBV)	39	58.2
Hepatitis C Virus (HCV)	37	55.2
Human papillomavirus (HPV)/cervical screen	15	22.4
Other	13	19.4
Herpes simplex virus (HSV)	10	14.9
Trichomoniasis	10	14.9
When consulted by a symptomatic patient, would you usually:		
Test and treat immediately (presumptive treatment)	35	52.2
Test and wait for results before treating	23	34.3
Refer to a sexual health clinic	13	19.4
Other (e.g. refer to GP, based on symptoms)	12	17.9
Refer to a specialist (in sexual health or infectious disease)	6	9.0
Treat immediately and not test	0	0.0
When conducting an STI screen, would you:		
Collect the specimens within the clinic	42	62.7
Send the patient to a laboratory collection site	24	35.8
Refer the patient to a sexual health clinic	11	16.4
What assistance would you provide a travel patient diagnosed with an STI to contact other partners (contact tracing)?		
Provide verbal advice for the patient to contact partners themselves	42	62.7
Refer the patient to a contact tracing website (e.g. Let them know; Drama downunder)	33	49.3
Provide written advice for the patient to contact partners themselves	17	25.4
Other	9	13.4
Assume Public Health will do this automatically	8	11.9
I do not provide any assistance	3	4.5
I would do it on behalf of the patient	1	1.5
Where would you seek professional advice regarding STI/BBV testing, treatment, and contact tracing?		
Local sexual health clinic	39	58.2
National STI Guidelines	38	56.7
Professional websites e.g. ASHM	32	47.8
Other colleagues within the practice	27	40.3
Other	8	11.9
Search the internet (e.g. Google)	5	7.5
Other text books	2	3.0

LARC, long-acting reversible contraception; ASHM, Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine.

were previously described as important in determining risk. However, when returning from travel, few reported ordering STI tests based on age (n , 12; 17.9%) or purpose of travel (n , 12; 17.9%), and for only two (3.0%) clinicians, patients returning from a high-risk country was the predominant motivator for return STI testing.

Most clinicians reported managing STI testing with few reporting referring clients to sexual health clinics (n , 13; 19.4%) or specialists (n , 6; 9.0%) for testing. Asymptomatic screening often focused on chlamydia (n , 54; 80.6%), gonorrhoea (n , 51; 76.1%), HIV (n , 51; 76.1%), syphilis (n , 47; 70.1%), Hepatitis B (n , 39; 58.2%), and Hepatitis C (n , 37; 55.2%), with markedly less focus on HPV (n , 15; 22.4%), herpes (n , 10; 14.9%), and trichomoniasis (n , 10; 14.9%). When testing a symptomatic patient, many tested concurrently with presumptive treatment (n , 35; 52.2%), though 23 (34.3%) reported waiting for positive results to be returned before providing treatment.

SRH information and discussions

Just under a quarter of participants (n , 16; 23.9%) always provided patients with SRH information, while many relied on the patient initiating/asking questions (n , 42; 62.7%), knowledge gained from the patient history (n , 37; 55.2%), or as part of discussions around contraception (n , 32; 47.8%). However, akin to risk determination, age (26, 38.8%), purpose of travel (n , 24; 35.8%), and travelling to a high-risk country (n , 24; 35.8%) appeared to be more useful in determining whether SRH information was provided rather than STI testing.

Discussions around SRH were most frequently reported to centre around the importance of safer sex (n , 52; 77.6%), STI testing upon return (n , 35; 52.2%), and regular STI testing (n , 31; 46.3%). PrEP and post-exposure prophylaxis (PEP) for HIV were reported to be included in a less than a third of SRH conversations (29.9% (n , 20) and 28.4% (n , 19), respectively). Some took a wider scope and included discussions on safe injecting behaviour (n , 10; 14.9%). Very few reported providing physical SRH resources, such as condoms and lubricant at the clinic (n , 11; 16.4%). Responses regarding information provision are in Table 3.

Future training

Areas of interest for future training are described in Table 4. Approximately 40% (27) of respondents indicated high to very high interest in undertaking further training in SRH, suggesting this is an important area of professional development for clinicians. Of the 67 clinicians that participated, 39 (58.2%) provided further information on the areas of future training that would be of interest, with the most frequently reported being PEP (n , 20; 51.3%) and PrEP (n , 17; 43.6%) for HIV, treating STIs (n , 17; 43.6%), conducting a

Table 3. Provision information and discussions of sexual and reproductive health (SRH) and sexually transmissible infection (STI) by Australian travel medicine clinicians ($n = 67$).

	<i>n</i>	%
On what basis would you provide information/advice/counselling on SRH to your travel patient prior to departure?		
When the patient asks questions	42	62.7
If patient assessed at higher risk based on patient's history	37	55.2
As part of a discussion regarding contraception	32	47.8
Age	26	38.8
Nature of travel (e.g. work, study, leisure)	24	35.8
Travelling to a high-risk country	24	35.8
As part of STI screen	18	26.9
I always offer SRH information as part of pre-travel advice	16	23.9
Other (e.g. as part of handout, vaccination information, as part of checklist)	7	10.4
I do not provide SRH information/advice/counselling to any travel patients prior to departure	0	0.0
When discussing sexual health with travel patients, do you:		
Discuss the importance of safer sex	52	77.6
Discuss the importance of STI testing on return	35	52.2
Discuss the importance of regular STI testing	31	46.3
Discuss emergency contraception	25	37.3
Discuss ongoing contraception options	21	31.3
Discuss PEP in case of HIV exposure	20	29.9
Discuss HIV PrEP	19	28.4
Provide written materials	16	23.9
Direct them to online materials	15	22.4
Provide condoms and lubricant	11	16.4
Discuss safe injecting behaviour	10	14.9
Other (e.g. discuss Zika virus, provide condoms only)	3	4.5
I do not discuss sexual health with travel patients	1	1.5
Who do you discuss HIV PEP with before they travel?		
Male travel patient disclosing intention to have sex with men	35	52.2
A health worker	27	40.3
A health student	23	34.3
I never discuss PEP with my travel patients before they travel	9	13.4
Other (e.g. direct to sexual health clinic, if raised as a concern, all patients)	8	11.9
Who do you discuss HIV PrEP with before they travel?		
Male travel patient disclosing intention to have sex with men	39	58.2
A health worker	19	28.4
A health student	16	23.9
I never discuss PrEP with my travel patients before travel	10	14.9
Other (e.g. direct to sexual health clinic, if raised as a concern, if GP provided, all patients)	7	10.4

sexual history (n , 12; 30.8%) and providing advice and information on safer sex (n , 11; 28.2%).

Table 4. Reported interest in undertaking future training in sexual and reproductive health among Australian travel medicine clinicians ($n = 67$).

	n	%
Self-reported interest in future training (1 = not at all interested; 3 = neutral; 5 = very high interest)		
1	8	11.9
2	5	7.5
3	18	26.9
4	17	25.4
5	10	14.9
No response	9	13.4
Areas of interest ($n = 39$)		
Advising on PEP	20	51.3
Treating STI	17	43.6
Prescribing PrEP	17	43.6
Conducting a sexual history	12	30.8
Providing advice and information on safe sex	11	28.2
Advising on emergency contraception	10	25.6
Conducting STI testing	8	20.5
Conducting contact tracing (partner notification)	8	20.5
Advising a patient about contact tracing (partner notification)	7	17.9
Providing advice and information on contraception	5	12.8
Prescribing oral contraception	4	10.3
Inserting intrauterine long acting reversible contraception (LARC)	4	10.3
Recalling a patient for follow-up testing	3	7.7
Prescribing LARC	2	5.1
Conducting pregnancy options counselling	2	5.1
Inserting Implant LARC	1	2.6
Other area not listed	0	0.0

Discussion

Australia has recognised the impact of travel on STI/BBV risk and transmission by including ‘travellers’ as a priority population in current national STI and HIV strategies.^{25,26} However, current practice within travel medicine clinics do not appear to be reflecting the recommendation provided in these national strategies. Our findings indicated the inclusion of SRH interventions mainly occurred when patients raised the issue themselves or self-disclosed their behavioural risk. Similarly, a systematic review by Crawford *et al.* demonstrated that less than half of participants do not receive SRH information in travel consultations.¹⁴ Given the significant benefits of including STI/BBV information in travel medicine consultations, it is important that future research explores barriers to its integration. Such barriers can include clinician discomfort, reduced confidence, and lack of training in discussing sexual health with clients, and/or fear of embarrassing

and or inadvertently stigmatising clients.^{27,28} There are also barriers to patients requesting this information which can be exacerbated by stigma, embarrassment, cultural attitudes/norms and risk perceptions among people from higher endemic countries.²⁹ Future research is needed to explore the barriers that travel medicine clinicians face when providing sexual health advice to travelling clients. Such understanding can be used to inform the development of strategies that equip clinicians with the capability, resources, and confidence to engage in sexual health related conversations with clients.²⁷

When SRH is integrated into consultations, many clinicians reported opening dialogue around safer sex practices and testing, but only one in four reported directing patients to resources to learn more. The provision of pre-travel STI/BBV information through physical or online platforms (e.g. brochures, websites) can be useful in the promotion of safe sexual practices, such as consistent condom use among travellers,^{11,30} and inclusion of additional resources for travellers could aid in reducing STI/BBV risk. Given only 16.4% of respondents reported providing condoms and/or lubricant at their clinic, practical tools and strategies, such as provision of condoms during travel consults may increase the use of condoms during travel. Croughs and colleagues, for example, found condom provision could increase use by up to five-times while travelling.³¹ However, cost implications for travel clinics could act as a barrier to providing condoms and lubricants.

Advice and provision of PrEP and PEP can provide important opportunities for HIV prevention among travellers. However, our study indicated that only a third of clinicians included PrEP and PEP in their travel consultations. As male-to-male sexual contact is the predominant route of transmission of HIV in Australia,³² men expressing such intentions prompted further discussion among some clinicians; however, it was still only discussed by approximately half of our sample. Despite men who have sex with men (MSM) being the predominant group at risk in Australia, surveillance data indicates that among heterosexually acquired HIV in Australian-born persons, a higher proportion (38%) was likely to be acquired overseas compared to the proportion among Australian-born MSM (3%).^{32,33} A similar trend has been seen in the United Kingdom where higher proportions of notification among heterosexually transmitted HIV infections were acquired overseas.³⁴

These findings indicate a need to engage heterosexual travellers in pre-travel conversations about HIV prevention. Additionally, there is a need to develop HIV prevention resources targeted towards heterosexual people, that can be used to help patients and clinicians initiate conversations about SRH. Providing pre-travel HIV education has been found to result in increased condom usage among travellers.³⁰ Thus, PrEP and PEP need to be appropriately included in consultations for travellers where potential risk is identified, (particularly those travelling to high prevalence settings), beyond those who disclose male-to-male-sexual intent. Travel

medicine practitioners should be encouraged to initiate conversations with travellers rather than relying only on patient self-disclosure. Interest in further training in PrEP and PEP was highlighted as an area of interest among our sample of clinicians that could help guide proactive inclusion in pre-travel consultations. Previous research suggests that barriers to PrEP prescribing can result from difficulties integrating it with other services, discordance on who should prescribe it, health care provider knowledge, and consultation time constraints.^{35–37} Therefore, future training opportunities may need to provide more than just knowledge surrounding specific conditions or medications, but how to effectively enmesh it with other services.

Additionally, participants expressed an interest in learning more about treating STIs, conducting a sexual history and providing advice and information on safe sex. Global research has indicated that many primary care and travel medicine physicians do not feel adequately trained to provide SRH or know where to find relevant information.^{27,38,39} Therefore it is important to ensure health care providers engaged in providing travel medicine services are equipped to provide not only appropriate information and testing for STI prevention and detection but also appropriate treatment and management including antimicrobial stewardship. This is of particular importance due to the global threat of antimicrobial resistance associated with STIs such as gonorrhoea, syphilis and chlamydia^{40–43} and the link between international travel and the global spread of drug-resistant STIs.⁴⁰ Additionally, travel medicine provides an opportunity for improving coverage of vaccinations for infections linked to sexual behaviour such as Hepatitis A and B, which are found to be suboptimal among travellers.^{44,45} Therefore, while PrEP and PEP might be notable areas for up-skilling, there is a need to provide wider STI/BBV and SRH training. Consideration needs to be given on how to best achieve effective education and dissemination of sexual health information and the development of consistent, clear tools that allow for streamlined access to up-to-date clinical guidelines and important information about emerging changes in STI trends, such as the current ongoing increases in infectious syphilis occurring in Australia and other high income countries to help improve service delivery.^{46–51}

Strengths and limitations

While considerable efforts were undertaken to ensure the reach of our survey to members of a professional travel medicine network, including attendees at a national conference, the sample size obtained does limit the representativeness of the data. The length of the survey, contributing to 'survey fatigue', may have compounded the limited response rate. To assist with survey fatigue, we relied mostly on yes/no responses, which provided limited opportunity for participants to provide

details (for example, on items such as purpose of travel) limiting contextual insight. The 'typical' composition of patients seen by the clinicians was not determined which may influence patterns and interpretation of findings and may not be representative of all travel medicine patient cohorts, nor was it possible to sample subgroup patterns/differences (e.g. international students, ethnicity, language/s spoken), which may represent a useful target for future research/investigation. The inclusion of a control group, that is a sample of general practitioners not involved in travel medicine, would have improved our capability to determine whether rates of SRH inclusion and practices compare to other professionals in primary care contexts and elucidate barriers unique to the travel medicine context. Nonetheless, our results do provide indicators of where service delivery could be strengthened.

Conclusion

Our findings have highlighted gaps in the provision of pre-travel consultation and training needs for SRH among travel medicine clinicians. There is a potential capacity in pre-travel consultation for the promotion of sexual health among travellers providing important public health benefits for individuals and the wider community. Travel medicine clinicians are ideally placed to provide proactive and opportunistic health promoting advice and services, yet these opportunities are only partially realised in the short-term. Training, particularly in the provision of PEP and PrEP, and greater distribution of condoms and printed information, may assist clinicians to take a more proactive approach to SRH consultations and STI/BBV testing. Further research is needed to explore models of care that will allow comprehensive SRH service to be integrated into standard pre- and post-travel care and address the current *ad hoc* delivery of services.

Supplementary material

Supplementary material is available [online](#).

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Data availability. The data that support this study cannot be publicly shared due to ethical reasons and may be shared on reasonable request to the corresponding author, if appropriate.

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