Challenges to providing pre-travel care for travellers visiting friends and relatives: an audit of a specialist travel medicine clinic

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Abstract

Travellers visiting friends and relatives (VFRs) often have complex pre-travel needs. We identified the characteristics, destinations, vaccinations and pre-travel advice provided to VFRs and compared these with non-VFR travellers. The significant differences we found suggest that future research should focus on improving the uptake of recommended interventions in VFR travellers.

Key words: VFR, pre-travel care, travel medicine, travel, visiting friends and relatives

Introduction

Travellers visiting friends and relatives (VFRs) are at greater risk of certain infections compared to non-VFR travellers because of last minute travel, longer travel periods, higher likelihood of visiting rural and remote areas, greater consumption of high-risk food and drink, close contact with locals and lower likelihood of seeking pre-travel advice and vaccinations.1,2 Children may be at particularly high risk if they have spent all or the majority of their lives in a developed country and hence lack immunity to relevant diseases.2

VFRs are becoming increasingly important in Australia with 24.6% of Australians born overseas in 2011, many of whom are from low and lower-middle income countries.3 In the year ending December 2015, 8,368,000 Australians travelled overseas. Of these, 24% were visiting friends and relatives, many to Asia and Africa.4

Aim

To identify and examine the characteristics, vaccinations and pre-travel advice provided to VFR travellers in a tertiary referral, hospital-based travel clinic in order to develop strategies to improve care for this group.

Methods

The study was a retrospective case-control audit. Non-identifiable data from the travel clinic, which is affiliated with the staff health clinic of a Melbourne public hospital, were collected on an electronic database. One hundred VFRs who sequentially attended the travel clinic before July 2014 were included. For each VFR, a non-VFR patient who attended the same clinic between 19 September 2013 and 31 July 2014 was selected as a control. To be included in the study cases needed to be VFRs who presented for pre-travel advice between 19 September 2013 and July 2014 and controls needed to be non-VFRs who presented for pre-travel advice during the same period. Non-VFRs were selected randomly from clinics held between 19 September and July 2014. Subjects were excluded if it was not clear whether they fell into the VFR or non-VFR category from the clinic notes. If cases attended in a group or with family, each case was recorded as a separate VFR or non-VFR.

A VFR was defined as a traveller who is an immigrant, ethnically and racially distinct from the majority population of the country of residence (a higher-income country), who was seen prior to returning to his or her home country (lower-income...
country) to visit friends or relatives. Family members, such as the spouse or children, born in the country of residence were included as VFRs.\(^5\)

Data collected included patient demographics (age, sex, country of birth), baseline characteristics (travel destination, duration of planned travel), vaccines recommended, received and refused, anti-malarial prophylaxis and travellers’ diarrhoea medication prescribed and travel advice given. Patient demographics were extracted from the clinic’s electronic medical record and vaccines and advice provided were extracted from electronic and scanned medical records.

Data were analysed using Stata software version 12.0. \(P\)-values were generated with the Wilcoxon–Mann–Whitney test, Chi-square test or Fisher’s exact test. A \(P\)-value of less than 0.05 was considered significant.

This study was approved by Melbourne Health Office for Research (QA2012129).

Results

Demographics and Baseline Characteristics

Demographics, characteristics and recommended interventions for the VFR and non-VFR groups are shown in Table 1. VFRs comprised 22% of the 461 pre-travel consultations conducted between September 2013 and July 2014. VFRs were younger \((P=0.002)\) and had longer average lengths of stay \((P<0.001)\) compared with non-VFRs. VFRs were more likely to present earlier for travel advice \((P=0.01)\).

Sixty-nine VFRs and 27 non-VFRs attended the clinic with at least one other person. Interpreters were not used in any consultations.

Country of Origin and Travel Destination

The most common countries of origin of first generation VFRs (VFRs not born in Australia) were Ethiopia, Sudan and South Sudan. Most non-VFRs were born in Australia. VFRs were more likely to travel to Africa than non-VFRs (76% and 9% respectively, \(P<0.001\)) (Figure 1). VFR travel destinations by region are shown in Figure 1. Non-VFRs commonly travelled to multiple countries.

Interventions and Travel Advice

In both the VFR and non-VFR groups, 95 individuals were offered vaccines. VFRs received a greater number of vaccines than non-VFRs. Specifically, they were more likely to need yellow fever \((62\% \text{ vs } 31\%, \ P<0.001)\) and meningococcal vaccines \((45\% \text{ vs } 2\%, \ P<0.001)\). There was no significant difference between groups in the proportion who were recommended

<p>| Table 1. Patient demographics, characteristics, advice given and interventions recommended and refused |
|--------------------------------------------------|--------------------------------------------------|------------------|</p>
<table>
<thead>
<tr>
<th><strong>VFR, (n=100)</strong></th>
<th><strong>Non-VFR, (n=100)</strong></th>
<th><strong>(P)-value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>29.6 (R: 0–82)</td>
<td>38.2 (R: 1.2–81.7)</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>61</td>
</tr>
<tr>
<td><strong>Baseline characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean time to departure (days)</td>
<td>42</td>
<td>39</td>
</tr>
<tr>
<td>Average length of stay (days)</td>
<td>61</td>
<td>22</td>
</tr>
<tr>
<td><strong>Interventions recommended/refused</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\text{(v)accines and anti-malarials})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People offered any intervention</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>People who declined any intervention</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Number of vaccines recommended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>1–2</td>
<td>33</td>
<td>60</td>
</tr>
<tr>
<td>3–4</td>
<td>48</td>
<td>31</td>
</tr>
<tr>
<td>(\geq 5)</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td><strong>Vaccines recommended</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typhoid</td>
<td>81 (6)*</td>
<td>83</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>59 (4)*</td>
<td>51</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Yellow fever</td>
<td>62 (2)*</td>
<td>31 (1)*</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>45 (16)*</td>
<td>2</td>
</tr>
<tr>
<td>Rabies</td>
<td>10 (8)*</td>
<td>12 (5)*</td>
</tr>
<tr>
<td>Tetanus</td>
<td>5 (2)*</td>
<td>8</td>
</tr>
<tr>
<td>Influenza</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td><strong>Other interventions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-malarials recommended</td>
<td>90 (15)*</td>
<td>48 (6)*</td>
</tr>
<tr>
<td>Traveller’s diarrhoea medication prescribed</td>
<td>67</td>
<td>91</td>
</tr>
<tr>
<td><strong>Advice given</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal bites</td>
<td>95</td>
<td>90</td>
</tr>
<tr>
<td>Food and water precautions</td>
<td>93</td>
<td>98</td>
</tr>
<tr>
<td>Safe sex/body substance exposure</td>
<td>13</td>
<td>27</td>
</tr>
</tbody>
</table>

\((x)^*\) is the number of people who were offered but declined intervention/vaccine.
hepatitis A, hepatitis B, typhoid and other non-travel vaccines except for influenza, which recommended to more non-VFRs. VFRs were more likely to need anti-malarials ($P < 0.001$). In contrast, non-VFRs were more likely to be prescribed travellers’ diarrhoea medication ($P < 0.001$). Twenty-eight per cent (27 out of 95) of VFRs declined an intervention (vaccine, malaria prophylaxis or traveller’s diarrhoea medication) compared with 9% (9 out of 95) of non-VFRs. Notably, 17% (15 out of 90) of suitable VFRs declined anti-malarial prophylaxis and 12% (12 out of 95) of VFRs who were offered interventions declined for reasons due to cost. Other recorded reasons for declining interventions were aversion to additional needles (one VFR) and perception of low risk (three VFRs and three non-VFRs).

Advice regarding animal bites and food/water precautions was usually given in both groups (>90%); however, safe sex and body substance precautions were discussed with only 13% of VFRs and 27% of non-VFRs.

Discussion

VFRs have been identified as a high risk and underserved group in relation to travel health.\textsuperscript{1,6} Although a number of studies have highlighted that VFRs are less likely to present for pre-travel consultations,\textsuperscript{1,7,8} no prior Australian study has examined the recommendations and vaccine uptake among VFRs who do attend for pre-travel care or compared this to non-VFRs attending Australian travel clinics.

The retrospective case control design was chosen as it was an efficient design for comparing the VFR and non-VFR groups. Similar to other studies, we found that VFRs were younger and planning to travel for longer periods than non-VFRs.\textsuperscript{6,7,9,10} However, in contrast to previous reports, we found that the time between presentation to clinic and planned departure was longer among VFRs. This may have been a chance finding given the relatively small number of travellers included in our study, or could be because our clinic is located within a tertiary referral centre and the VFR patients referred are different to those presenting to community practitioners for travel advice and need to plan in advance in order to get an appointment in the clinic. We also assessed the number of interventions accessed by both groups, finding that, given their planned destinations, VFRs needed more vaccinations but were also more likely to decline vaccinations and anti-malarials than non-VFRs, usually citing cost factors. La Roque et al.\textsuperscript{6} also found that a higher proportion of VFRs declined vaccinations compared to non-VFRs and speculated that this may be due to cost and safety concerns, as well as timing of the consultation and lack of perceived benefit.

In contrast to our findings, a recent US study found that lack of concern about the illness was a more commonly cited reason for vaccine refusal amongst VFRs than cost.\textsuperscript{11} Uptake of vaccines amongst VFR populations may differ depending on destination, ethnicity and clinic setting. The high proportion of VFRs travelling to Africa in our study reflects the relatively high numbers of Sudanese, South-Sudanese and Ethiopian immigrants seen at the hospital clinic who require yellow fever vaccination.

We also examined rates of discussion of animal bites, food and water precautions, safe sex and body substance precautions and found that safe sex and body substance precautions were discussed with only 13% of VFRs. These issues can be difficult
to discuss because of cultural barriers and time constraints; however, it is an important topic particularly for VFRs who may be more likely than other types of travellers to engage in sexual activities with locals.12

No professional interpreters were used in any of the consultations despite being available for booking. This is probably because at least one person in the family usually spoke English and interpreted for the attendees. However, given that language barriers are known to prevent VFRs from accessing pre-travel advice,1 relying on family members to interpret may not be optimal and more careful consideration of language barriers should be considered in future clinic appointments.

While our study had some novel key findings, there were also limitations, including the small sample size and the design, which was a retrospective chart review and, therefore, limited by the data entered at the time of consultation. This could be especially relevant if the notes were incomplete as the study could under-estimate the number of people declining uptake of vaccines. The fact that patients seen at this tertiary referral centre were a highly selected population travelling to high risk destinations (62% of VFR and 31% of non-VFR were offered yellow fever vaccination) means that this group may not accurately represent the broader population of Australian VFR travellers.

Conclusion

VFRs are a specific group of travellers with unique travel patterns and destinations who may require different considerations and prioritizations of pre-travel interventions including vaccines and anti-malarials. It is often difficult to manage the complex needs of VFRs, especially if a large number of interventions are needed given long travel durations and often remote itineraries, as well as language barriers, cost and time constraints. While other studies have shown the importance of maximizing the access to pre-travel advice and providing opportunistic pre-travel care to VFRs, future research should be directed at how to improve the likelihood of VFRs taking up recommended interventions and travel advice recommended to them once engaged in pre-travel care.

Authors’ Contributions

K.R. and N.C. developed the initial study design. K.R. performed the relevant data extraction. K.L. provided advice on data inclusion and presentation. All authors reviewed the paper, provided comments and approved the manuscript prior to submission.

Conflict of interest: No relevant disclosures.

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