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Travel agents as partners in promoting referral of at-risk travellers to travel health clinics

Laura A. MacDougall
Department of Epidemiology and Biostatistics
McGill University, Montréal
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Abstract

Increases in travel-related illness require new partnerships to ensure travellers are prepared for health risks abroad. The present study evaluated a health promotion intervention aimed at travel agents to encourage them to refer at-risk travellers to travel health clinics. Information on the knowledge, attitudes, and behaviours of travel agents before and after the intervention was compared using two self-administered questionnaires. Proportions of first-time attendees of travel clinics reporting referral by a travel agent were monitored in order to detect post-intervention changes.

Evaluation of the intervention revealed a small improvement in travel agents' overall attitudes and beliefs ($p=0.03$), in particular their intention to refer ($p=0.01$). Sixty-five percent of travel agents self-reported an increase in referral behaviour; owners or managers of the agency were significantly more likely to do so than other travel agents (OR = 7.25; 95% CI: 1.64, 32.06). Older travel agents, those that worked longer hours and those with some past referral experience had significantly higher post-intervention scores. The proportion of travellers attending a travel health clinic who had been referred by a travel agent did not increase over the course of the study.

Education of travel agents early in their training is required to underscore the need for clinic referrals and to ensure routine referral of all at-risk travellers. Travel agents can be willing partners in referring travellers to travel health clinics and agencies should be encouraged to develop specific referral policies.

Résumé

Une augmentation des maladies reliées aux voyages requiert de nouveaux partenaires pour s'assurer que les voyageurs puissent faire face aux risques de maladies rencontrés à l'étranger. La présente étude évalue une intervention de promotion de la santé s'adressant aux agents de voyage afin de les inciter à référer aux cliniques santé-voyage, les voyageurs à risque. Les connaissances, les attitudes et les comportements des agents de voyage ont été comparés à l'aide de deux questionnaires auto-administrés avant et après l'intervention. Les proportions de voyageurs allant pour la première fois à une clinique de santé-voyage et disant avoir été référés par leur agent, ont été examinées afin de détecter des changements après l'intervention.

L'évaluation de l'intervention révéla une légère amélioration des croyances et attitudes générales des agents de voyage ($p=0.03$), en particulier dans leur intention de référer les voyageurs ($p=0.01$). Soixante-cinq pourcent des agents ont rapporté une hausse de leur pratique à référer; les agents gérant ou propriétaires de leur agence étaient significativement plus portés à le faire que les autres agents (OR=7.25; 95% IC: 1.64, 32.06). Les agents de voyage plus expérimentés, ceux qui travaillaient de plus longues heures, et ceux qui avaient déjà référé des voyageurs aux cliniques santé-voyage ont obtenus des résultats significativement supérieurs après l'intervention. En cliniques santé-voyage, la proportion des voyageurs indiquant qu'ils ont eu une référence de leur agent n'a pas augmenté au cours de l'étude.

L'éducation des agents de voyage tôt dans leur formation est requise pour souligner l'importance de référer aux cliniques de santé-voyage et pour s'assurer que tous les voyageurs à risque soient référés d'emblée. Les agents de voyage peuvent être des partenaires efficaces pour référer les voyageurs aux cliniques de santé-voyage et les agences devraient être encouragées à développer des politiques spéciales de référence.

Preface

This thesis was written as a collection of manuscripts submitted for publication, logically joined and integrated through supplementary, connecting texts. The following paragraphs describe the requirements of a thesis-by-manuscript at McGill.

> Candidates have the option of including, as part of the thesis, the text of one or more papers submitted or to be submitted for publication, or the clearly-duplicated text of one or more published papers. These texts must be bound as an integral part of the thesis.
>
> If this option is chosen, connecting texts that provide logical bridges between the different papers are mandatory. The thesis must be written in such a way that it is more than a mere collection of manuscripts; in other words, results of a series of papers must be integrated.
>
> The thesis must still conform to all other requirements of the "Guidelines for Thesis Preparation". The thesis must include: A Table of Contents, an abstract in English and French, an introduction which clearly states the rationale and objectives of the study, a review of the literature, a final conclusion and summary, and a thorough bibliography or reference list.
>
> Additional material must be provided where appropriate (e.g. in appendices) and in sufficient detail to allow a clear and precise judgement to be made of the importance of originality of the research reported in the thesis.
>
> In the case of manuscripts co-authored by the candidate and others, the candidate is required to make an explicit statement in the thesis as to who contributed to such work and to what extent. Supervisors must attest to the accuracy of such statements at the doctoral oral defense. Since the task of the examiners is made more difficult in these cases, it is in the candidate's

interest to make perfectly clear the responsibilities of all the authors of the co-authored papers.

Authors' Contribution

As first author, I was actively involved in research planning and in the development of all study instruments. I coordinated data collection, carried out statistical analyses and wrote all scientific manuscripts. Dr. Theresa Gyorkos, as thesis supervisor, contributed to all stages of the research, from study planning and execution to publication and the dissemination of study results. Dr. Michal Abrahamowicz and Dr. Karen Leffondré directed the choice of statistical methods and aided in the interpretation of study results. Drs. J. Dick MacLean, Brian Ward and Dominique Tessier provided substantive advice in the area of tropical medicine and were involved in the design of study instruments and materials.

Suggested Short Title

Travel agents as partners in promoting travel clinic referrals

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Unfortunately, only one name can appear on the cover of a thesis, a poor reflection of a truly collaborative effort. In truth, many individuals and organizations provided the support, collaboration, and cooperation that were instrumental to this work.

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Collection of data on referral rates would not have been possible without the exceptional collaboration of staff at participating travel health clinics: Mme Elaine Cyr of the McGill Centre for Tropical Diseases, Mme Gabrielle Par of Clinique santé-voyage, Mme Linda Forrest of the Clinique santé-voyage de Montréal, Mme Diane Dinel and Mme Liliane Cloutier of the Clinique santé-voyage de l'Hôpital du Sacré-Coeur de Montréal, Mme Marie-Claude Giguère of the Centre de médecine de voyage du Québec and Mme

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Dedication

To the health of all Canadian travellers.

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1 INTRODUCTION

Research indicates that many travellers are under-prepared for the health risks of travel. Indeed, morbidity associated with international travel has been well documented and it is estimated that between 15 and 54 % of all travellers develop travel-related illnesses. While there are many available sources of pre-travel health information, the quality is extremely variable and the sources themselves often underused. As most travel-related illnesses are preventable, new strategies and partnerships are required to ensure that travellers are more knowledgeable about, and better protected against, the health risks of travel. As such, this research develops and examines a health-oriented partnership with travel agents. Specifically, through an intervention targetted to travel agents, it seeks to promote their referral of appropriate 'at risk' clients (ie. those traveling to tropical and subtropical destinations) to travel health clinics.

1.1 Travel demography

The ease and low cost of travel today mean that an unprecedented number of people are travelling for an increasing variety of reasons. Over the past several decades, there has been an explosion in short-term business travel and travel for tourism. According to the World Tourism Organization, in 1996 alone, 593 million international tourist arrivals were reported (World Tourism Organization 1997). In 1994, 395,000 Québec residents traveled to areas other than the United States and Europe, representing 23.4% of all Canadian travel to these destinations (Statistics Canada 1994). The increased accessibility of international travel is sparking an increase in travel to exotic destinations and a concomitant rise in the number of people who may experience travel-related illnesses.

1.2 Travel-associated morbidity

The health risks associated with international travel range from minor symptoms, to severe morbidity, and even death. Statistics on travel-related illness are not routinely collected; nonetheless an appreciation of the magnitude of illness can be obtained from individual studies among discrete travel groups. Table 1 summarizes results from

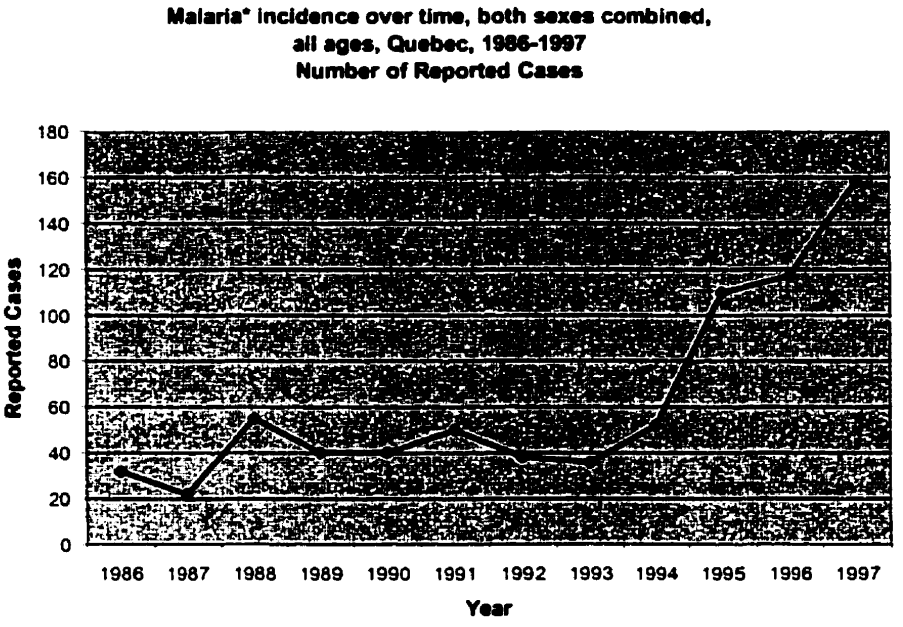
selected studies of travel-related morbidity. Estimates range from 15% to 54% for groups of travellers to various types of tropical and subtropical destinations (Kendrick 1972, Steffen *et al.* 1987, Looke *et al.* 1992, Reid & Cossar 1993, Reed *et al.* 1994).

Table 1: Published estimates of travel-related morbidity.

FIRST AUTHOR	DATE OF DATA COLLECTION	RESIDENCE OF TRAVELLER POPULATION	SAMPE SIZE	DESTINATION AND/OR TYPE OF TRAVELLER POPULATION	MORBIDITY ESTIMATE
Kendrick	1971	United States	26,119	US travellers returning through Los Angeles, New York, Honolulu and Miami airports	22%
Reid	1973-1985	Scotland	14,227	Travellers on package holidays	37%
Steffen	1981-1984	Switzerland	10,524	Travellers to developing countries by air, car and rail	15%
Looke	1992	Australia	??	Travel-clinic attendees	54%
Reed	1992-1993	Scotland	1,541 76	Medical Practice attendees Travel-clinic attendees	42% 22%

Most travel-related illnesses are preventable given appropriate immunization, malaria prophylaxis and adequate knowledge of 'safe' behaviourisms. Gastroenteritis is by far the most commonly acquired travel-associated illness, occurring in 20% to 50% of those travelling to destinations in tropical and subtropical areas of Latin America, Africa, and Southern Asia (Committee to advise on tropical medicine and travel 1998). Among other serious travel-related infections are malaria, sexually transmitted diseases, respiratory infections, hepatitis A and B, cholera, typhoid, dengue, and yellow fever. In recent years, the number of Québec travellers acquiring malaria has been increasing (Figure 1) and several deaths have occurred (Health Canada 2000).

Figure 1: Malaria incidence in Québec, Health Canada, 1986-1997



** includes all species of malaria and also cases where speciation was not reported*

From 1985 to 1996, 5,634 cases of malaria were reported in Canada; however, it is estimated that this represents only 30%-50% of all actual cases (Committee to advise on tropical medicine and travel 1997).

In addition to personal health consequences, morbidity associated with international travel has social and global effects. The cost of hospital admissions due to travel-related illness has been estimated in the UK to be approximately 20 million dollars $USD per year (Reid & Cossar 1993). This figure is likely also seriously underestimated as it excludes the cost of specialists, primary care consultants, laboratory analyses, drugs, and lost days of work. In a one-year retrospective study of 651 travellers visiting a group medical practice, 42% became ill during their travels. Of these, 26% required consultation with a doctor while abroad, 5% were admitted to hospital overseas and 48% required further consultation upon their return (McIntosh *et al.* 1994). While costs were not calculated, these figures indicate substantial use of health care resources related to travel-acquired illness. In addition, most travel is of short duration (median duration = 21 days – Hill 1991), often necessitating continued treatment by local health services upon

return. Many travel-related diseases have relatively long latency periods; this, coupled with short stays abroad, often causes *post-travel* development of symptoms (Jong & McMullen 1997). Over and above the immediate treatment costs of travel-related illness, there are other costs and harms associated with travel-related illnesses; for example, the emergence of new multi-drug resistant strains and the introduction of disease into non-immune populations.

Travellers to endemic regions are often not only at risk for tropical infections, but for more common, globally-occurring diseases as well. A survey of individuals reporting to a travel health service revealed that, prior to travel, a primary immunization series or booster immunization was recommended for 43% of travellers; a measles booster was recommended for 55% of those born in or after 1957. Seventy percent of travellers were due for a primary series or one-time booster shot for poliomyelitis if they were at risk for the disease during their trip (Hill 1991). To compound matters, nearly one third of travellers wait until the last two weeks before departure to consult a travellers' health service (Hill 1991) even though an initial consultation 8-12 weeks before departure is recommended. (MacLean 2000 – personal communication) This lead-time is required in order to ensure enough time to schedule immunizations safely and effectively as well as to verify that there are no adverse effects of any medications prescribed (Reyes & Shoff 1997). Most travellers are likely unaware of the time window required to complete pre-travel health preparations. Unfortunately, this means that administration of immunizations must often be prioritized. Consequently, travellers may not receive the full complement of shots that would optimally have been recommended for their travel (Allard 1983).

1.3 Pre-travel health preparedness - high-risk traveller groups

Despite the high morbidity associated with international travel, many travellers are unaware or unprepared for the health-related risks of travel. In 1972, the Centers for Disease Prevention and Control in the US reported that 19% of travellers who became ill abroad received no vaccinations in preparation for their trip (Kendrick 1972). In 1987, Lobel and collaborators found that only 72.4% of American travellers to high-risk areas

had been warned about the risk of malaria before departure and only 64.1% had been advised to use prophylaxis (Lobel *et al.* 1987). A 1999 Canadian study identified landed immigrants returning to visit their country of origin as being at particularly high risk for malaria (dos Santos *et al.* 1999). In fact, only 54% of travellers to India sought advice before travelling and only 31% intended to use any chemoprophylaxis at all (dos Santos *et al.* 1999). Other high-risk groups include businessmen and frequent flyers who often overlook the need for pre-travel health advice. In fact, in England, this group of travellers recorded the highest increases in travel-acquired falciparum malaria (Phillips-Howard *et al.* 1990). Also, decreased compliance with hepatitis A immunization has been shown to be associated with an increase in travel experience (Kollaritsch & Wiedermann 1992), suggesting that experienced travellers may have a lower perception of travel health risks. Internationally agreed-upon withdrawal of mandatory vaccination certificates (with the exception of yellow fever) has meant that travellers are less often advised to seek vaccination and consequently to see a medical professional before departure (Dawood 1993). Presently in Canada, neither travel agencies nor airlines are required to issue health advisories to international travellers (Ward 1999 – personal communication).

1.4 Pre-travel health sources

Despite the fact that travellers are under-prepared for the health effects of travel, there are nonetheless many sources they may consult for pre-travel health advice. Resources include general practitioners, travel agents, embassies, books, magazines and brochures. As well, Internet sites, specialized travel health clinics, friends and family and other travellers are often consulted for travel health advice. Unfortunately, the quality of information provided by these different sources is extremely variable and the services themselves are underused.

Foreign embassies have been shown to provide poor health advice for travellers (Shafer *et al.* 1996) and books and brochures run the risk of becoming outdated due to rapidly changing patterns of disease risk. Specialized Internet sites for travel health have been created and offer the potential to overcome these difficulties, provided that they are

competently and continuously updated. However, these have yet to be formally evaluated; neither their frequency of use nor their effectiveness in reducing the burden of travel-related disease has been established. Time and again, studies have shown how poorly physicians perform in providing travel advice to their patients (Demeter 1989, Mott & Kinnersly 1990, Lobel *et al.* 1993). Most recently, Hatz *et al.* (1997) examined travel advice provided by Swiss and German general practitioners (GP). Nationally approved recommendations on malaria medication were correctly given only between 9% and 45% of the time, depending on the nationality of the GP and the travel destination. Correct advice on vaccination requirements was given only between 2% and 47% of the time, again varying with nationality of GP and travel destination (Hatz *et al.* 1997). Unfortunately, this study confirms earlier reports that GPs, whose quality of pre-travel advice is considered inadequate, prefer to counsel patients themselves rather than refer them to a travel health clinic (Cossar & Reid 1992).

Travel health has emerged in the last decade as a specialized medical discipline. The focused nature of this speciality ensures a more comprehensive pre-travel interview typically involving review of the traveller's medical (including vaccination) history, itinerary, activities at each destination, accommodations and trip duration with special attention paid to climate, time of year, current epidemics, and the specific needs of the traveller (Reyes & Shoff 1997). In addition, travel health specialists have access to a more continuous update of travel health material including information on health standards and recommendations, changing disease outbreak situations and health risks. As travel health clinics provide services for a particular clientele, they have the added advantage of being able to stock less commonly given vaccines such as those for meningococcal meningitis and Japanese encephalitis (Dawood 1993). In spite of the advantages offered by travel health clinics, there is a lack of definition about what credentials, experience and services should designate a travel health specialist. Consequently, there is variation in the quality of pre-travel advice received from even travel health specialists (Pesch *et al.* 1991, Keystone *et al.* 1994). However, several studies have indicated that travel health clinics perform their role better than more traditional health services. In a recent study on malaria, family practitioners were cited as the primary source of information for most

travellers but were more likely to prescribe an inappropriate antimalarial chemoprophylactic regimen than were travel health clinics or public health centres (76% v. 36%) (dos Santos *et al.* 1999). A comparison between travellers consulting a general practitioner and those using a travel clinic revealed that clinic attendees were more likely to be travelling to high-risk destinations, but that they were better prepared and reported a significantly lower rate of trip-related illness (22%) than did travellers without such advice (48%). Clinic attendees were also less likely to consult their doctor on their return home (Reed *et al.* 1994). These results suggest that while travel health clinics may be inconsistent in their provision of appropriate health information, they still offer a more effective alternative to traditional methods of health information delivery. In particular, the quality of travel health advice provided by *Canadian* travel health clinics was considered, by one study, to be substantially better than their American counterparts (Keystone *et al.* 1994). Unfortunately, figures from a Québec study conducted during the winter of 1999, suggested that under 10% of travellers surveyed en route to Mexico and the Dominican Republic had consulted a travel health clinic prior to departure (Provost 1999).

This situation suggests the need for new and stronger partnerships between travel health specialists and other key stakeholders in travel health. In particular, partnerships must be developed which encourage the pre-departure use of travel health clinics. The overall benefit of such partnerships is an improvement in traveller preparedness, leading ultimately to a reduction in travel-related morbidity.

2 LITERATURE REVIEW

The following manuscript describes prospective partnerships in travel health. It details what is known about each partner's current role in travel health based on a review of the relevant literature. In addition, it suggests, from a multi-partner perspective, strategies to strengthen and improve referral behaviour to travel health clinics.

This manuscript was submitted to the journal Social Science and Medicine (MS # DP/2000-584) on March 14, 2000. The subject matter presented is timely and original in content; while there have been descriptive studies made of various issues in travel health, interventions designed to improve traveller preparedness, if attempted, have yet to be formally evaluated in the published literature. Therefore, the approaches presented here to improve referral behaviour arise from a critical review of the existing literature.

2.1 Manuscript #1 –

Promoting Travel Clinic Referrals: Exploring Partnerships for Healthier Travel

Laura MacDougall, BSc[1] and Theresa Gyorkos, PhD[2]

[1] MSc candidate, Department of Epidemiology and Biostatistics
McGill University, Montréal, Québec, Canada
[2] Associate Professor, Department of Epidemiology and Biostatistics, McGill University, and Associate Director, Division of Clinical Epidemiology, Montreal General Hospital, Montréal, Québec, Canada

(Short Title: Partnerships for Healthier Travel)

Correspondence and proofs:

Dr. Theresa Gyorkos
Division of Clinical Epidemiology, Room L10-420,
Montréal General Hospital, 1650 Ave. Cedar
Montréal, Québec, Canada H3G 1A4;
E-mail: **mdgt@musica.mcgill.ca**
Tel: 514-937-6011 ext 4721; Fax: 514-934-8293

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Abstract

Many travellers are unaware or unprepared for the health-related risks of international travel. Indeed, studies of travel-related morbidity have estimated that between 15 to 45% of travellers to tropical and sub-tropical destinations experience a variety of mild to severe clinical symptoms during their travel. While some inadequacies may exist in the pre-travel health advice provided by travel clinics, recent studies have suggested that these clinics are more effective in promoting health awareness and consequently in preventing illness than more traditional health services. Unfortunately, traveller attendance records at pre-travel health clinics are poor. This situation suggests that new partnerships must be developed which encourage healthier travel by promoting the pre-departure use of travel health clinic services. The intent of this paper is to generate discussion as well as to initiate research into the development and evaluation of new partnerships to promote healthier travel.

Keywords:

Travel medicine, travel clinic, pre-travel advice, traveller populations, partnership

Introduction

The health risks associated with international travel range from minor symptoms to severe morbidity, and even death. Studies of travel-related morbidity have estimated that illness develops in between 15 to 54% of travellers to tropical and sub-tropical destinations (Table 1) (Cossar & Reid 1989; Kendrick 1972; Looke *et al.* 1992; Reed *et al.* 1994; Steffen *et al* 1987) With increasing trends in global travel (Figures 1a and 1b), it is certain that there will continue to be a rise in the number of people suffering from travel-related illnesses. Rising morbidity may also be due, in part, to increased risk of exposure to infectious disease (e.g. among the more adventurous travellers), non-compliance with preventive measures (e.g. antimalarial chemoprophylaxis), and unawareness or unpreparedness for the health-related risks of international travel (Lobel *et al.* 1987; Kendrick 1972; McIntosh *et al.* 1994; dos Santos *et al.* 1999).

There are many sources of pre-travel health advice available to the traveller; however, the quality of such sources is extremely variable (Demeter 1989;Grabowski & Behrens 1996;Hatz *et al.* 1997;Reid *et al.* 1986;Shafer *et al.* 1996;) and use of these services is unacceptably low (Cossar & Reid 1989; dos Santos *et al.* 1999; Lobel *et al.* 1987) . This situation requires urgent attention. Measures must be found to encourage travellers to seek pre-travel health advice and to ensure that quality of this advice is first rate. Success in these endeavours will demand the creation of strong partnerships between travel health experts and key stakeholders such as members of the travel industry, pharmacists, general practitioners and employers, among others, in addition to the travellers themselves.

Sources of pre-travel health advice available to the traveller population include travel clinics, government sources, some specialized agencies (ie. the International Association for Medical Advice to Travellers- IAMAT), phone-in lines, general practitioners, travel agents, embassies, books, magazines and brochures, and computer-based services (Internet sites, CDs, other software). While some inadequacies may exist in terms of the quality of health advice provided by some travel clinics (Keystone *et al.* 1994), recent studies have suggested that these clinics are more effective in preventing illness than

other more traditional health services (dos Santos *et al.* 1999;Reed *et al.* 1994). In a study on malaria, family practitioners were cited as the primary source of antimalarial information for most travellers but they were more likely to prescribe an inappropriate chemoprophylactic regimen than were travel clinics or public health centres (76% v. 36%) (dos Santos *et al.* 1999). A comparison between travellers consulting a general practitioner and those consulting a travel clinic revealed that clinic attendees were more likely to be travelling to high-risk destinations, but that they were better prepared and reported a significantly lower rate of trip-related illness (22%) than did travellers without such advice (48%) (Reed *et al.* 1994). Clinic attendees were also less likely to consult a doctor on their return home (Reed *et al.* 1994).

Unfortunately, in spite of their preventive value, attendance at pre-travel health clinics is poor. In fact, as lately as winter 1999, just 9% of 1,249 travellers to Mexico and the Dominican Republic departing from the Montréal International Airport in Québec, Canada reported consulting a travel health clinic prior to departure (Provost 1999). This situation suggests that new partnerships must be developed which encourage healthier travel by promoting the pre-departure use of travel health clinics.

Travel Agents

Travel agencies are still the purchase-point of choice for most travellers today despite the availability of self-directed electronic ticketing. In fact, estimates from a major North American airline place travel agencies as the purchase point of choice for between 75 to 80 percent of its customers (Table 2). As such, travel agencies constitute by far the greatest resource opportunity for pre-travel contact with travellers in general and travellers whose destinations include tropical and subtropical regions in particular. In fact, studies of travellers in the UK have described the travel agent as the most consulted source of pre-travel health advice (Cossar *et al.* 1990). An Australian study shows that travel agents were a partial source of pre-departure health advice for 71% of travellers to Bali, with 12% obtaining travel advice solely from their travel agent (Grayson & McNeil 1988). In a Canadian study, travel agents were reported as a source of information on health-related risks of travel by 42% of travellers (Provost 1999). There has, however,

been concern over the quality of the advice given by travel agents (Blair 1996; Demeter 1989; Grabowski & Behrens 1996; Reid *et al.* 1986) as well as the availability of appropriate health resources for travel agents (White & Sharma 1983). Although travel agents themselves have expressed concern over their training and knowledge of travel health (Reed *et al.* 1994), they have nevertheless declared a desire to be more involved in providing travel health information to their clients (Ivatts *et al.* 1999). Specifically, travel agents would take a more active role in providing health advice to their clients if more standardized *general* health information from reputable sources was available to them (Ivatts *et al.* 1999). At the very least, travel agents are uniquely positioned to inform their clients of the possibility of health risks associated with travel and to recommend pre-travel health consultations.

Specialty travel agents also exist who service a particular clientele. Such agents or agencies may concentrate on adventure travel, mountain trekking, cruise travel, or travel to particular regions of the world. Targeting these subgroups of travel agents may be particularly useful in promoting the health of specific traveller populations. For example, although they may be at increased risk for malaria, it has been suggested (dos Santos *et al.* 1999) that immigrants returning to visit their (malaria-endemic) country of origin are seriously under-using antimalarial chemoprophylaxis. Partnerships with travel agencies that specialize in travel to malaria-endemic countries may help to identify immigrant populations at risk and promote referral of this special risk population to travel health clinics.

Many avenues exist through which partnerships with travel agents may be established. Successful ones, however, will minimize the extra work requested of travel agents whose schedules are already demanding. Opportunities for computer-mediated referral systems exist given travel agents' use of computerized reservation systems. Travellers to high-risk destinations could be identified according to specific algorithms and written referrals to travel health clinics generated with their travel tickets. In the past, a similar strategy was implemented to provide travellers visiting family physicians with health information specific to their destination (Dardick 1985), but this has not been widely adopted.

However, using this type of partnership to promote referral rather than attempting to provide comprehensive travel health information may be a more simple and effective use of the technology. Alternatively, the speed of the Internet coupled with its ability to reach a widespread audience make it a tool worth investigating. The increasing access travel agents have to the Internet provides an opportunity to link travel agents to continuously updated, quality health information sources. While several quality sites exist, the best method to link agents to health Internet sites still requires research. Travel agents could also be provided with key referral information, including *who* should be referred to a pre-travel medicine clinic as well as *where* local clinics are located. Indeed, this information may be transmitted to travel agents in various forms: through workshops, in brochures, through e-mail listserves, or via the Internet. Through referrals, travel agents can promote healthier travel in their clients without becoming "experts" in travel medicine. A system of referrals should also allay fears of legal liability since travel agents will not be providing detailed health information, thereby minimizing the risk of misinforming their clients.

General Practitioners

Previous studies have repeatedly shown that general practitioners (GPs) perform poorly in providing travel advice to their patients (Table 3) (Demeter 1989; Lobel 1993; Mott & Kinnersley 1990; Usherwood & Usherwood 1989). More recently, in 1997, a randomly-selected sample of Swiss and German general practitioners were studied for the type of travel advice given to travellers (Hatz *et al.* 1997). Pre-tested telephone interviews and mailed questionnaires were used to assess their knowledge about travel advice for two frequent holiday destinations, Kenya and Thailand (Hatz *et al.* 1997). Ninety-six percent of 150 Swiss GPs and 89% of 150 German GPs reported giving travel advice to their clients. Unfortunately, the pre-travel advice given was found to be far from satisfactory in both GP groups. Nationally approved recommendations on malaria medication were correctly cited only between 9% and 45% of the time, with observed variations depending on the nationality of the GP and the travel destination. Correct advice on vaccination requirements was cited between 2% and 47% of the time, again varying with nationality

of GP and travel destination. Surprisingly, this study also confirmed earlier reports that GPs prefer to counsel patients themselves rather than refer them to a travel clinic.

For this reason, general practitioners represent perhaps the most challenging of all potential partners. While some do refer their patients to specialists in travel medicine, the reasons why others do not have not adequately been explored. One study in New Zealand suggested that GPs don't refer travellers for travel health advice (Leggat *et al.* 1999) because they believe that by knowing a patient's complete history, they are better able to provide comprehensive travel advice. Because travel medicine as a medical speciality is in its infancy, referral may be limited, at least in part, by under-awareness of the services being offered. Over time, therefore, there is an expectation that GPs may become willing partners in the referral of high-risk travellers. Some benefits of this partnership might include better balance in caseload mix, less time spent researching current trends in travel medicine, and a significantly decreased likelihood of liability resulting from incorrect advice or prescriptions.

In addition to providing personal referrals, as partners, GPs could facilitate the introduction and maintenance of promotional material in waiting rooms that encourage patient use of travel health clinic services. As with other medical referrals, when warranted, GPs could also be encouraged to provide a brief written medical history for patients they refer to travel health clinics. This partnership might also consider continuing medical education activities co-ordinated by experts in travel medicine. In addition, travel clinic services might be expanded to provide more direct telephone support for GPs intending to counsel their own patients.

Pharmacists

In a study of 2,627Austrian travellers, 16% reported the pharmacy as a source of pre-travel health advice (Kollaritsch & Wiedermann 1992). However, relatively little is known about the type or frequency of travel advice given by pharmacists. In the only such study to date (Kodkani *et al.* 1999), 56% of 120 Swiss pharmacists surveyed by telephone reported giving travel health advice an average of 2-3 times per month. As

gastroenteritis is the most common form of travel-related illness (Committee to Advise on Tropical Medicine and Travel 1998), the treatment of travellers' diarrhea is an area in which pharmacists can be important partners in travel health, given the over-the-counter availability of most anti-diarrheal medications. However, there was concern that while all pharmacists recommended anti-diarrheal drugs for the treatment of diarrhea, only 59% spontaneously recommended increased fluid intake (Kodkani *et al.* 1999). When asked about co-operation between pharmacists and physicians, 7% of respondents declared that "the pharmacist is important as a "filter", to decide who needs to get specialized health advice from a doctor or clinic" (Kodkani *et al.* 1999). While small, 7% may under-represent this sentiment since answers were volunteered by respondents in an "other" category.

Pharmacists have been engaged as health promoters in other areas and these experiences may provide a useful guide to co-operative work with pharmacists in travel health. For example, a survey of 455 pharmacists in Montréal, Québec measured participation in health education and disease prevention related to cardiovascular disease (O'Loughlin *et al.* 1999). When asked about the frequency with which they "initiated discussions about a client's health when they perceived a need", 28% responded that they often initiated a discussion and 39% reported that they sometimes did. While there is undoubtedly room for improvement, over 90% of respondents reported that integrating prevention into their practice was important (O'Loughlin *et al.* 1999).

Other Travel Industry Partners

Apart from travel agents, health partners within the travel industry might include tour operators, airlines and travel insurance companies. Specific information on health insurance was mentioned in all British travel brochures surveyed in 1995, however one third lacked any other health information, only half gave general health advice and just 11% contained specific health information (Reid *et al.* 1986). While these figures had improved when travel brochures were reassessed in 1992, only 39% recommended that travellers obtain further health advice (Cossar *et al.* 1993). Given the widespread coverage of insurance issues in travel publications, insurance industry support for the

referral of travellers may successfully encourage travel clinic use. In fact, promoting healthier travel is of direct benefit to insurance companies given that travellers file claims at a higher rate than non-travellers (Liese *et al.* 1997). Since 1990, a British Council directive on package travel, package holidays and package tours has required all tour operators to provide information on "health formalities required for the journey and stay" in all brochures made available to the customer. It further specifies that the information be "legible, comprehensive and accurate" (British Council 1990). In addition to appearing in all tour brochures, health information must also be communicated to the consumer, "in writing or any other appropriate form, *before the contract is concluded*" (British Council 1990). This represents an important step in ensuring that travellers are aware of the potential health risks of travel, and similar legislation might well be considered in other countries. However, not only do travellers need to be made aware of the health risks of travel, they need to be provided with information on what they can do to reduce their risk. In this way, tour operators may be in a good position to recommend to their clients a pre-travel visit to their local travel health clinic.

Airline companies may also become successful partners in promoting referral. For example, many travellers book tickets directly with the airlines over telephone reservation systems. While waiting for an agent to respond, automated voice systems could provide the customer with information on travel health clinics, in addition to the information on fare specials that is currently broadcast. Articles on travel health could be published in in-flight magazines or on airline websites, encouraging the pre-departure use of travel health clinics for those passengers travelling to risk destinations.

Private and Public Employers

Frequent flyers and business travellers are also at risk for travel-related illnesses. In fact, it is in business travellers that the highest increases in travel-acquired *falciparum* malaria have been observed (Phillips-Howard *et al.* 1990). Of concern to employers, it has been estimated (Steffen *et al.* 1987) that 15 working days are lost, on average, for travellers who are unable to work as a consequence of a travel-related illness. In addition, it has been demonstrated that the number of medical insurance claims filed increases linearly

with the frequency of travel (Liese *et al.* 1997). As such, companies that send their employees to areas where health risks are present need to take a more proactive role in assuring that their employees take advantage of pre-travel health services.

Apart from corporate travel, many governmental and non-governmental organizations frequently send employees to tropical or sub-tropical destinations. These organizations may be international in scope (e.g. the World Bank, the World Trade Organization, the World Health Organization, the Red Cross/Crescent), government agencies (e.g. IDRC), or non-profit organizations and NGOs (e.g. missionary groups, Peace Corps volunteers, Médecins Sans Frontiers/Doctors Without Borders). Because of their diversity in travel health needs, public and private sector employers would benefit from partnerships with travel clinics and might consider a standing policy whereby employees consult travel health clinics routinely before departure.

Media

Media campaigns have been used successfully in the past to promote other health behaviours such as mammography and influenza immunisations. Recently, the media has begun reporting about the health risks of travel, bringing the issue into the public eye. Those with an interest in promoting travel health must take advantage of this interest to encourage media reports to include information not only about the risk of disease, but measures travellers may take against illness, including a pre-travel visit to a travel health specialist. Promoting awareness of travel health clinics will help to ensure that clinic referrals come from a variety of sources, such as friends, family members and co-workers in addition to health professionals and travel industry personnel.

Ministeries of Health

As government providers of health care and in order to minimize costs incurred by returning travellers seeking post-travel care for trip-related illness, Ministries of Health might undertake health promotion activities that take into consideration the needs of their traveller populations. These activities would primarily address prevention of travel-

related morbidity. They can be carried out by different levels of Ministry personnel and can include various types of activity; they can also be targetted to different traveller populations and might be integrated, as appropriate, with other Ministry activities. Standardization of quality information at the national level is an important aspect of this partnership. Lastly, an active partnership involving consultation or representation from travel clinics would ensure that traveller needs are identified and, when necessary, appropriate actions taken.

World Health Organization

The role of the World Health Organization in such a partnership is envisioned to include assurance of quality information at the international level (such as now being collated for malaria chemoprophylaxis) and surveillance and monitoring aspects for different diseases (e.g. yellow fever, dengue, emerging diseases). Liasion with the International Association for Travel Medicine is also considered appropriate and essential.

Conclusion

In order to be successful, health promotion activities must reach beyond the clinic – and ultimately, by as direct a route as possible, to the general traveller population itself. Healthy travel must become a priority not simply for the traveller, but for other stakeholders as well. As such, health promotion activities that encourage travellers to visit a pre-travel health clinic must target these groups, individually or in combination. When forging new partnerships, it is worthwhile to remember that "partnership" implies a give and take for both sides involved. When dealing with affiliates outside the medical community, the benefits of health partnerships are often indirect and must therefore be highlighted; a sense of altruism is often insufficient to convince individuals or businesses to enter into health-oriented partnerships. Finally, it is not enough simply to explore the feasibility of partnerships between various stakeholders, but partnerships must be constantly *evaluated* in order to ensure that the changing needs of the traveller population are being met and ultimately, that by ensuring optimal traveller preparedness, travel-related morbidity is kept to a minimum.

Many potential partners exist who are well positioned to promote traveller's health. Our intention is to generate discussion as well as to initiate much-needed research into the development and evaluation of travel health partnerships.

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Table 1: Published estimates of travel-related morbidity

FIRST AUTHOR	DATE OF DATA COLLECTION	RESIDENCE OF TRAVELLER POPULATION	SAMPLE SIZE	DESTINATION AND/OR TYPE OF TRAVELLER POPULATION	MORBIDITY ESTIMATE
Kendrick	1971	United States	26,119	US travellers returning through Los Angeles, New York, Honolulu and Miami airports	22%
Cossar	1973-1985	Scotland	14,227	Travellers on package holidays	37%
Steffen	1981-1984	Switzerland	10,524	Travellers to developing countries by air, car and rail	15%
Looke	1992	Australia	??	Travel-clinic attendees	54%
Reed	1992-1993	Scotland	1,541 76	Medical Practice attendees Travel-clinic attendees	42% 22%

Table 2: Purchase points for air travel with Delta airlines*

Travellers Purchasing Airline Tickets by Point of Purchase	
Point of Purchase	(%)
Travel Agencies	75-80%
Directly with Airline	15-20%
Internet	Less than 5%

*based on data provided by P. Lai of Delta Airlines, February, 2000.

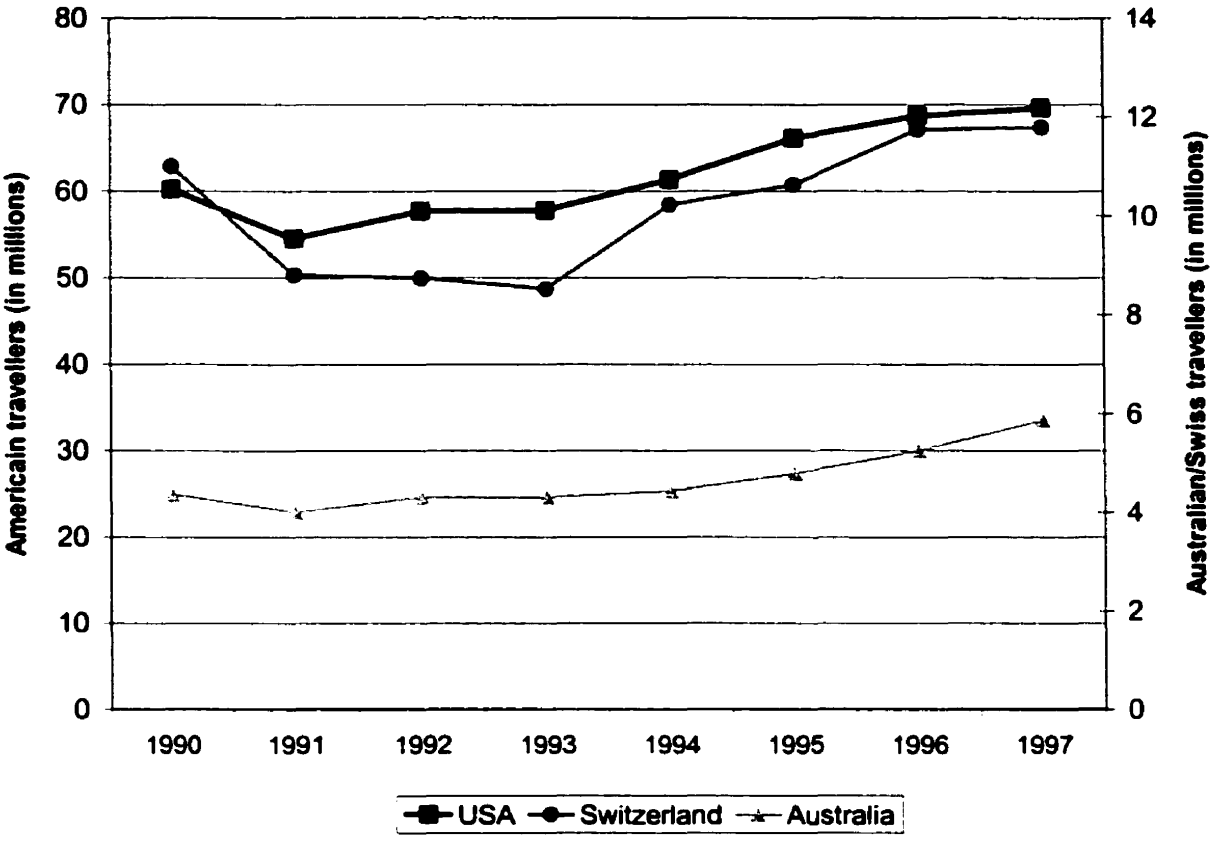
Table 3: Inadequacies in travel-related health advice given by general practitioners (GPs)

Study (First Author, Year)	Sample Size (n)	Population	Type of Health Advice	% Inadequate	Comparison Source
Hatz 1997	150	Swiss GPs	Antimalarial advice (Kenya) Antimalarial advice (Thailand)	7% 13%	National recommendations (Switzerland)
			Vaccination advice (Kenya) Vaccination advice (Thailand)	63% 39%	
	150	German GPs	Antimalarial advice (Kenya) Antimalarial advice (Thailand)	29% 45%	National recommendations (Germany)
			Vaccination advice (Kenya) Vaccination advice (Thailand)	76% 57%	
Lobel 1993	195	US GPs	Vaccination advice Antimalarial advice	99.5% * 88% **	1991 CDC recommendations
Mott 1990	86	British GPs	Cholera Vaccination	73%	Liverpool School of Tropical Medicine
Usherwood 1989	50	British GPs	Prophylactic measures	60%	Department of Health and Social Security
Demeter 1989	62	Canadian Doctor's Offices (incl: Receptionists, GPs, and nurses)	Health risks and prophylactic measures	18%	World Health Organization and US Public Health Service

* GPs giving incorrect vaccination advice for one or more of 3 travel scenarios, including 22% who had "no opinion"

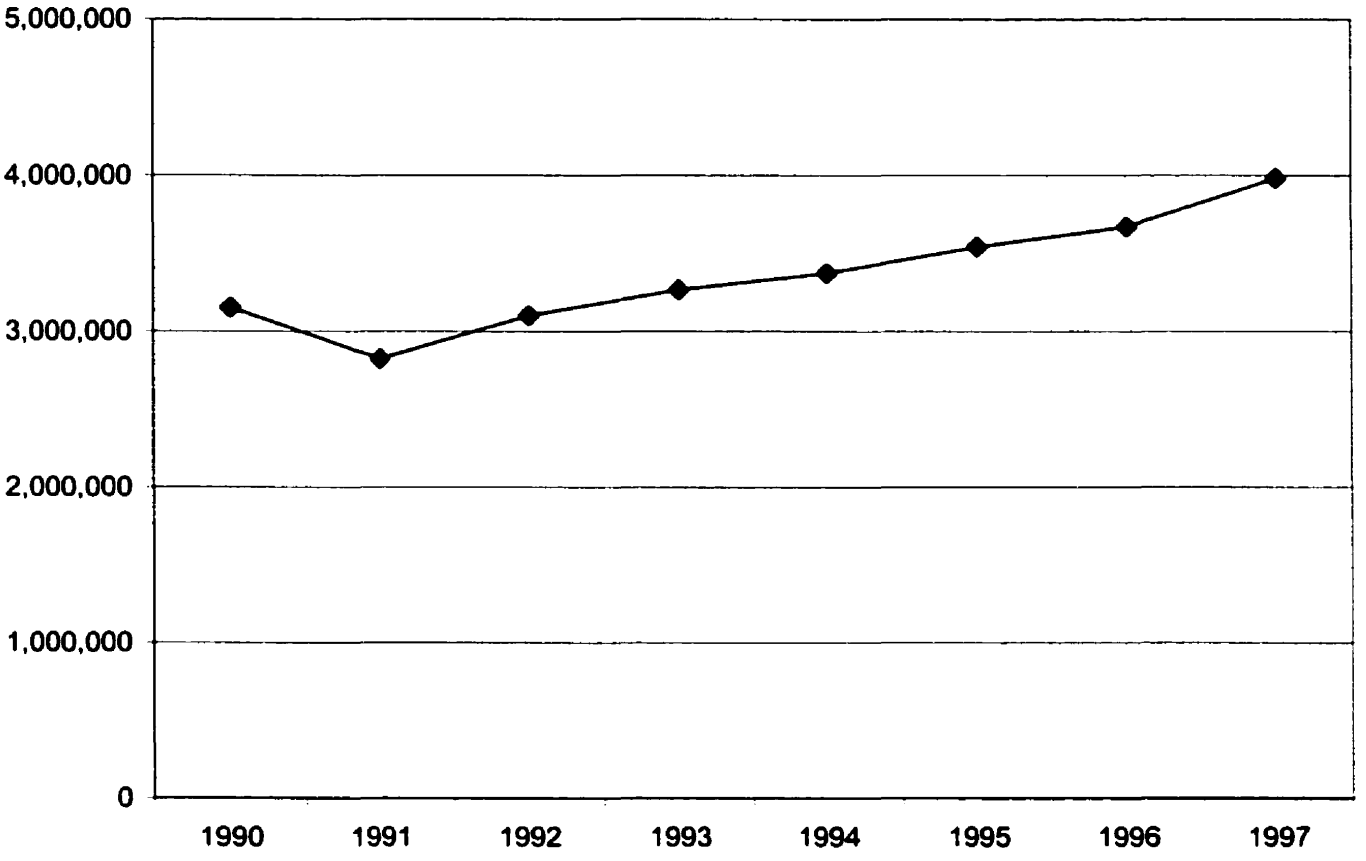
** GPs giving incorrect antimalarial advice for one or more of 3 travel scenarios, including 24% who had "no opinion"

Figure 1a



*Data source: World Tourism Organization (2000)

Figure 1b



**Data source: Statistics Canada – Catalogue no. 66-201. International Travel, 1990-1997.*

Figure captions

Figure 1a: Number of American, Australian and Swiss travellers abroad, 1990-1997*

Figure 1b: Number of person-trips by Canadian Residents to countries other than the United States, 1990-1997.*

2.2 Selection of travel agents as study partner

Health promotion activities that encourage travellers to seek pre-travel health advice are becoming increasingly urgent given the current situation and future predictions in tourism. However, research is required to determine the feasibility and effectiveness of partnerships between the travel industry and medical community.

In light of their frequent contact with travellers, travel agents are in a remarkable position to partner with travel health specialists in the promotion of healthier travel. In fact, recent work by Dr. Sylvie Provost with traveller populations in Québec confirmed that travel agents were the most frequently reported source of travel health information for travellers recruited in airport departure lounges (Provost 1999). However, more importantly, this research demonstrated that receiving a referral from a travel agent was the most important predictor of consulting a travel health clinic prior to departure. In fact, when comparing travellers who were recruited in travel health clinics (consulters) to non-consulters recruited in airport departure lounges, referral by a travel agent was associated with an 8-fold increased odds of consulting a travel health clinic, after controlling for potential confounding variables (Provost 1999). In addition, travel agent referrals were especially important determinants of consultation in travellers under 45 years of age and travellers who had never before consulted a travel health clinic (Provost 1999).

To address the potential of a partnership with travel agents in promoting 'healthier' travel, the present study focuses on evaluating changes in the attitudes and practices of travel agents following a health promotion intervention.

3 STUDY OBJECTIVES

3.1 Research question

Do health promotion activities targeted to travel agents that specifically promote referral of at-risk travellers to travel health clinics 1) produce a positive shift in the psychological constructs that influence travel agents' referral behaviour and 2) increase the traveller's pre-departure use of travel health clinics?

3.2 Study objectives

Primary objectives:

- To assess travel agents' current practices and beliefs concerning referral of travellers to travel health clinics.
- To determine the effect, on the attitudes and practices of travel agents, of introducing a health intervention that promotes referral of "high risk" travellers to travel health clinics.
- To identify characteristics of travel agents or their work environment that make them particularly prone to an increase in referral activity following the intervention.
- To assess travel agents' satisfaction with the health promotion intervention.

Secondary objective:

- To determine whether an impact of the health promotion intervention is detectable, over the short term, on the proportion of first-time travel clinic patients who report referral by their travel agent.

Tertiary objectives:

- To recommend measures to improve travel health partnerships with travel agents.
- To identify future avenues of research.

4 STUDY METHODOLOGY

4.1 Study populations and overview of the study designs

4.1.1 Primary Outcomes – Pre/Post Design

The primary study population included travel agents working in travel agencies on the island of Montreal (telephone area code 514) who had been in practice for a minimum of one year, and whose clientele included travellers to destinations considered to be more at risk for travel-related illness (all destinations except Canada, the United States, Eastern and Western Europe, the Caribbean, Australia and New Zealand). One agent from each agency was invited to participate. The participant received a written, self-administered questionnaire both before and after a health promotion intervention to assess its impact on their attitudes, practices and beliefs regarding referral of clients to travel health clinics. Information was also sought regarding the travel agents' comparative satisfaction with the two health promotion tools used in the study (i.e. brochure and dedicated website). Baseline information was collected on the current practices of travel agents with respect to the provision of health information to travellers. General characteristics of the travel agent and travel agency, the type of health information discussed with clients, the source of this travel health information as well as current referral patterns were assessed.

4.1.2 Secondary Outcome – Interrupted time-series design

The secondary study population included first-time patients at travel health clinics on the Island of Montréal. Each clinic collected weekly statistics on the proportion of all first-time patients who had been referred by their travel agent. Data collection was restricted to first-time patients of any clinic in order to avoid double counting of travellers. This would occur if a traveller made several trips to the clinic during the course of pre-departure counselling for a single trip (as is usually the case). A proportion was used rather than the numerator alone in order to account for seasonal changes in the number of travellers consulting travel health clinics. Each week, an overall proportion was calculated by summing across all health clinics. An interrupted time-series design evaluated changes in proportions following the health promotion intervention (Mohr

1992). The time series design offers improvements over a simple before and after analysis as it allows assessment of the outcome at multiple points before and after the health promotion intervention. This allows for a more accurate description of the impact of the intervention and may increase statistical power. However, evaluation of referral rates at clinics provides only an indirect measure of the effect of the intervention as it is not able to pin-point clinic patients referred *specifically* by the travel agents/travel agencies receiving the intervention. Tracking these individuals was not feasible owing to the extra workload demanded of travel agents and clinic staff, in addition to recall problems of clinic patients, given that overseas tickets are often purchased months in advance. Despite this limitation, the use of proportions was considered suitable for a preliminary exploration of the secondary effects of the intervention.

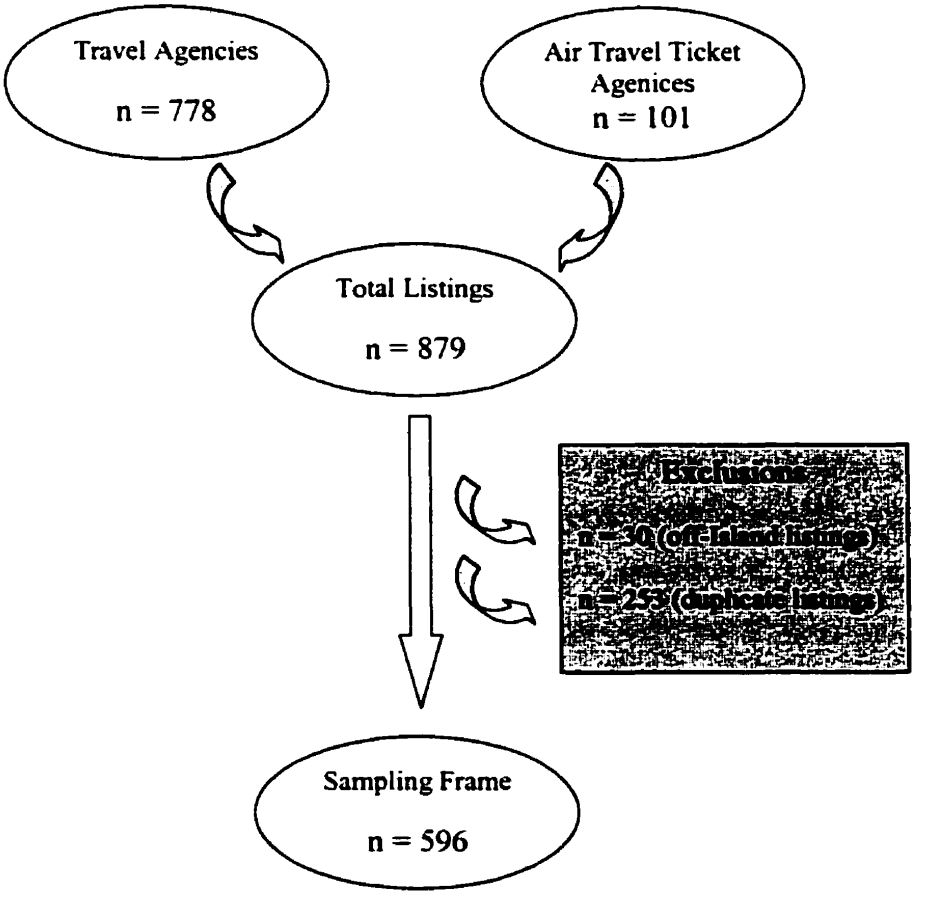
4.2 Sampling frame

The names and addresses of travel agencies on the island of Montreal were obtained from the yellow pages on-line directory at www.yellowpages.ca between December 13 and 15, 1999. Travel agencies were listed under two headings: 1) Travel Agencies (n=778) and 2) Air Travel Ticket Agencies (n=101), for a total of 879 listings. Listings were numbered and entered into an Excel database that included the name of the agency, its address, postal code and telephone number. Thirty agencies not on the Island of Montréal were excluded. In addition, 253 duplicate listings were deleted from the sampling frame. Duplicates arose from four scenarios:

1. Agencies having more than one telephone number.
2. Agencies who were listed under an English name in addition to their French one.
3. Agencies having more than one variation of their name, and consequently, appeared twice in the listing (fictitious example: Voyages Christophe Colombe and Agence de voyages Christophe Colombe)
4. Agencies that had submitted their name under both categories (i.e. travel agency and air travel ticket agency) and therefore appeared twice.

After removal of duplicate listings and listings for agencies off the Island of Montréal, 596 agencies remained in the sampling frame (Figure 2).

Figure 2: Sampling frame



Source: Yellow Pages on-line directory – www.yellowpages.ca, Dec. 13-15, 1999.

4.3 Sample size

In order to enable statistically valid comparisons of travel agents' attitudes and beliefs before and after the intervention, sample size estimates were based on methods for matched ordinal data. The main outcome measure was considered ordinal since 5-point Likert scales were used to measure travel agents' degree of agreement with belief statements, and matched since the same subject responded to the same questions before and after the intervention. Julious and colleagues have demonstrated that calculating the

sample size required for matched *binary* data results in a close approximation of the sample size needed for matched *ordinal* data (Julious & Campbell 1998, Julious *et al.* 1999). In fact, this approximation will slightly *over*estimate the required number of subjects since the chance of observing discordant pairs increases as the number of categories increases. Connett *et al.* (1987) have demonstrated that use of the *un*conditional rather than the conditional formulation to calculate sample size for paired binary data results in a more accurate sample size estimate. This formula is derived for a modified McNemar test applied to pair-matched data. The unconditional formula is:

$$n_{total} = \frac{\left[z_{1-\alpha/2}\left(\sqrt{\psi+1}\right) + z_{1-\beta}\sqrt{(\psi+1)-(\psi-1)^2 P_{10}} \right]^2}{(\psi-1)^2 P_{10}} \qquad (1)$$

where α indicates the level of type I error, $1-\beta$ denotes the required power and ψ represents the expected odds ratio. P_{10} represents the probability of negative change (corresponding, in our context, to the case when a travel agent agrees to a question on the pre-intervention questionnaire, but disagrees to the same question asked following the intervention).

Sample size calculations were based on the assumption that a minimum relevant effect corresponded to at least 20% of respondents demonstrating a positive change in attitudes and beliefs (i.e. at least 20% of respondents moving up the Likert scale by at least one category between the pre-intervention and post-intervention questionnaires). Using the approximation for matched *binary* data, the 5-point Likert scale was dichotomized into Agree/Disagree in order to calculate the odds ratio for a 20% improvement (e.g. $P_{01}=0.20$ = a change in attitude from disagreement on the pre-intervention questionnaire to agreement on the post). The calculation also allows for a 5% negative change in attitude (P_{10}). The following 2x2 table represents the expected proportion of discordant *pairs* of answers and the resulting odds ratio.

Figure 3: Sample size calculation: 2x2 table

Post-intervention \ Pre-intervention	Disagree	Agree
Disagree	P_{00}	P_{10} (0.05)
Agree	P_{01} (0.20)	P_{11}

$$OR = 0.20/0.05 = 4$$

Using equation (1), the required sample size given an α of 0.05, a power of 80% ($1-\beta$ = 80%) and an odds ratio (ψ) of 4 is as follows:

$$n_{total} = \frac{\left(1.96\sqrt{4+1} + 0.8416\sqrt{(4+1)-(4-1)^2 0.05}\right)^2}{(4-1)^2 0.05} \cong 85$$

Therefore, for each question dealing with attitudes and beliefs, 85 subjects would be required to respond to both the pre- and post-intervention questionnaire in order to detect a 20% positive change.

In fact, by dichotomizing the results rather than making use of all 5 categories in the Likert scale we obtain an over-estimation of the sample size requirements. However, because the expectation is that most improvements will be of only *one* point on the Likert scale, 85 subjects represents only a very *slight* increase in the number of subjects required.

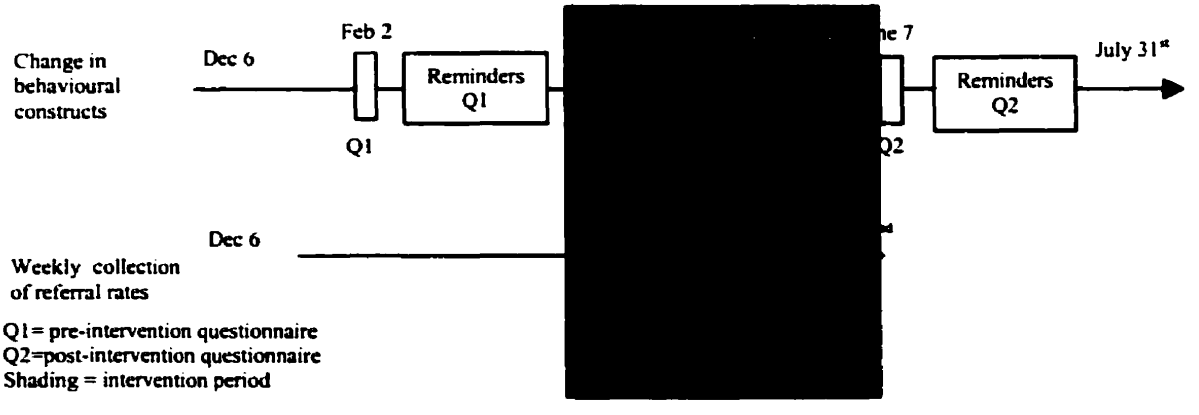
Of only 2 previous studies involving travel agents, response rates for self-administered questionnaires varied from 42% to 87% (Gorman & Smyth 1992, Ivatts *et al.* 1999). Using the most conservative estimate of response rate (42%), the expectation was that 202 agencies would need to be contacted to obtain 85 study participants. This meant that approximately one third of the travel agencies on the Island of Montréal would need to be contacted to meet the sample size requirement for the present study. S-Plus, version 4.0,

was used to generate a random sample of 200 from among the 596 agencies in the sampling frame. Next, one travel agent from each of the 200 randomly selected agencies was chosen by the agency manager to participate in the study.

4.4 Study timeline

The study was conducted from December 1999 to July 2000. Data for primary and secondary outcomes were collected concurrently as depicted in (Figure 4) . The lower timeline represents the weekly collection of referral rates from seven participating travel health clinics from Dec. 6, 1999 to June 2nd, 2000. The upper timeline denotes the sequence of events for data collection from travel agents. The baseline survey was mailed on February 2, 1999 and reminder telephone calls began approximately 2 weeks later on February 18. Reminders continued until intervention delivery or until a minimum of two reminder calls had been made. Delivery of health promotion packages to the travel agents took approximately two weeks from March 27th to April 10th. The intervention period began with delivery of the health promotion and continued for approximately 2 months, until June 7th, when the post-intervention questionnaires were mailed. Telephone reminders were again made, according to a comparable protocol.

Figure 4: Study timelines, 1999-2000.

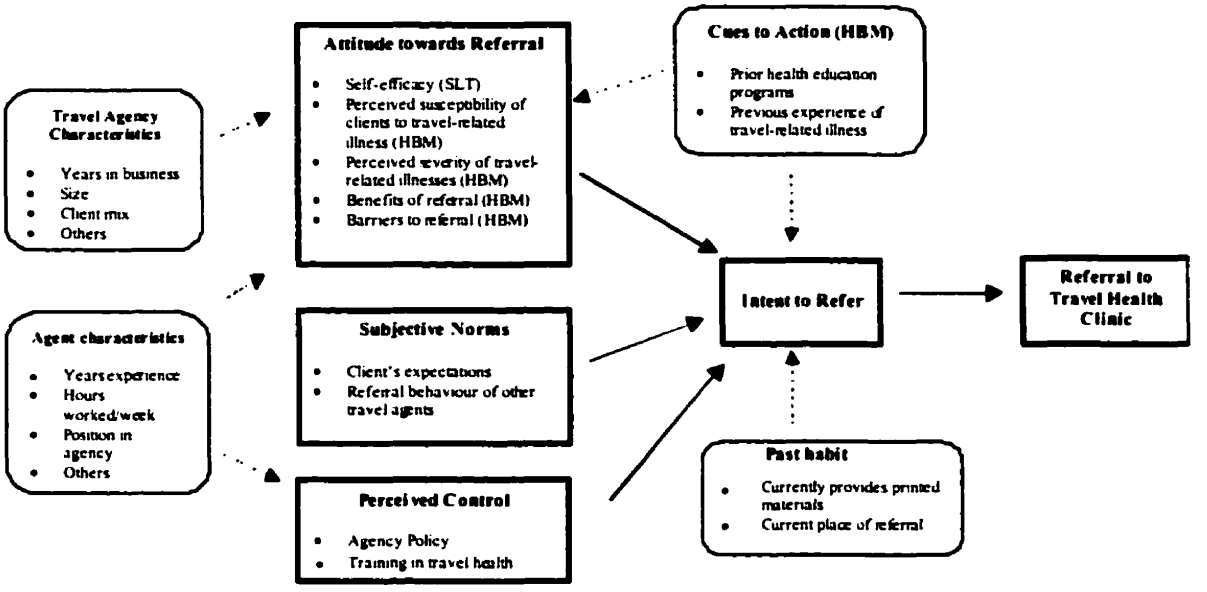


4.5 Conceptual model of referral behaviour

Sociobehavioural models serve as the basic framework for research on health behaviours, and consequently, form the foundation of this study. Such models are composed of constructs, or underlying attributes of behaviour change. In this study, questions representing constructs of behaviour change were selected for inclusion in the baseline and follow-up questionnaires based on their applicability to referral behaviour. Given that referral can be thought of as an action under voluntary control, the model developed for this study represents a modified version of Ajzen's Theory of Planned Behaviour (Ajzen & Madden 1986, Ajzen 1988), and incorporates constructs from other well-known models, where appropriate. The working model includes constructs of self-efficacy, perceived control, perceived susceptibility to disease, perceived severity of disease, outcome expectations, barriers to referral, cues to action, habit, subjective norms, and intention, as well as characteristics of the travel agency and the travel agent him/herself (Figure 5). While considered *separate* constructs in this model, self-efficacy, perceived susceptibility to disease, perceived severity of disease, outcome expectations and barriers to referral might be grouped conceptually as "Attitudes" by proponents of the Theory of Planned Behaviour, as depicted in Figure 5. It is noteworthy that there is no standard method of designing questions meant to define a particular construct of behaviour change. For the most part, each investigator has developed a unique approach to operationalizing each variable. Therefore, it is a testament to the models of behaviour change that the dimensions (or constructs) remain predictive despite these different variations in measurement (Janz & Becker, 1984).

The changes in these constructs of behaviour, as reported by travel agents before and after a health promotion intervention, are measured by this study and constitute the primary outcome of interest. The impact of the intervention was expected to be strongest on participants' attitudes towards referral and intention to refer. Characteristics of the agent and agency, cues to action, perceived control, and past habit were considered important to explain baseline referral behaviour, but were not expected to change following the intervention.

Figure 5: Theoretical model of referral behaviour*



Original constructs of the Theory of Planned Behavior
Additions to the basic model to incorporate specific study factors
SLT Construct adopted from Social Learning Theory
HBM Construct adopted from the Health Belief Model
Proven associations of the Theory of Planned Behavior
Hypothesized associations (although not tested by this research)

*This model represents a modified version of the Theory of Planned Behaviour, including constructs from the Health Belief Model and Social Learning Theory

4.6 Definition of study variables

Fifteen questions tapping modifiable behavioural constructs were asked of travel agents on the pre-intervention questionnaire (Appendix 1) and again on the post-intervention questionnaire (Appendix 2). Travel agents were asked to indicate their level of agreement with each statement, measured on a five point Likert scale, from "strongly disagree" to "strongly agree". Covariates included baseline characteristics of the responding travel agent and their agency, as well as constructs of perceived control, past habit and cues to action. Covariates were assessed on the pre-intervention questionnaire only.

4.6.1 Self-efficacy

Self-efficacy concerns a person's perception of their ability to perform particular health behaviours, their degree of motivation, and so on. "Perceived self-efficacy can affect health behavior in a number of ways. Self-judgements of efficacy determine choice behavior: that is, which activities will be attempted, and which avoided...Self-efficacy also affects the amount of effort devoted to a task, and the length of persistence when difficulties are encountered." (O'Leary 1985). Self-efficacy was measured by travel agents' responses to two statements.

1. *"I can promote healthier travel among my clients."*
2. *"I feel comfortable talking to my clients about health issues relating to travel."*

4.6.2 Perceived susceptibility to disease

Perceived susceptibility to disease forms an important component of the Health Belief Model. While usually used to describe a person's belief in their personal susceptibility to disease, in the case of referral behaviour, it relates to the travel agent's belief that *their clients* are at risk of travel-related morbidity. In order to assess this perception, travel agents were asked to assess their level of agreement with the following statement: "*I am concerned about the health of my clients travelling to tropical and sub-tropical destinations.*"

4.6.3 Perceived severity of disease

Like perceived susceptibility to disease, perceived severity of disease is an original construct of the Health Belief Model. It concerns feelings of the perceived consequences of contracting a disease. In this case, perceived severity deals with the travel agents' perception of the severity of diseases *their clients* may contract while travelling to tropical or sub-tropical destinations. In order to assess this perception, travel agents were asked to consider the following statement: "*I believe that travel-related illnesses can have serious health consequences for my clients.*"

4.6.4 Outcome expectations – perceived benefits vs. perceived barriers

Outcome expectations are judgements of the likely consequences of a given behaviour. They can also be thought of as a cost-benefit analysis weighing the perceived benefits of a specified action against perceived barriers to taking that action. The result of this analysis will be an overall positive or negative expectation regarding the outcome of a particular health behaviour. When the benefits of action outweigh the barriers, the likelihood of taking action increases. In this research, travel agents were asked about *perceived benefits* of referral behaviour through their level of agreement with the following three statements:

1. *"I believe that clients who stay healthy on their trip are more likely to travel again"*
2. *"By promoting healthier travel, I will add value to my service as a travel agent"*
3. *"I believe that referring clients to travel health clinics will reduce their risk of travel-related disease"*

On the other side, *barriers to referral* were assessed by travel agents' level of agreement to the following four statements:

1. *"I am worried that if I suggest that there are health risks associated with their trip, my clients may not buy a ticket"*
2. *"I am too busy to refer my clients for pre-travel advice"*
3. *"I don't know where to refer my clients for pre-travel advice"*
4. *"I can't tell who needs to consult a travel health clinic before travelling and who doesn't"*

Travel agents were also given an opportunity to record any other factors that might prevent them from engaging in referral behaviour. An open ended question asked travel agents to "please mention any other reasons why you might feel uncomfortable or unable to refer clients for pre-travel advice".

4.6.5 Subjective norms

All of the above constructs – self-efficacy, perceived susceptibility, perceived severity, and outcome expectations – represent components of a travel agent's attitude towards the act of referral. Apart from personal attitudes and beliefs, subjective norms may play an

equally important role in the strength of a travel agent's intention to refer clients to travel health clinics. The concept of subjective norms was developed as a component of Fishbein and Ajzen's Theory of Reasoned Action (Ajzen & Fishbein 1980), the precursor to Azjen's Theory of Planned Behaviour. Subjective norms reflect the social environment of an individual and consider the influence of "significant others", such as clients, managers or other travel agents, on an individual's intention to refer clients to travel health clinics. Subjective norms are determined by a person's normative belief about what others think he or she should do as well as the individual's motivation to comply with those people's wishes (Carter 1990). Subjective norms were evaluated by travel agents' responses to the following:

1. "*My clients expect me to deliver general health advice*"
2. "*The travel agency should be a place that promotes the health of travellers*"
3. "*It is part of my job to promote healthy travel in my clients*"

4.6.6 Intent to refer

According to the Theory of Reasoned Action (Ajzen & Fishbein 1980), a person's attitudes and beliefs regarding a behaviour, their subjective norms and perceived control combine to predict that person's *intention* to perform the behaviour in question. While intention to perform a behaviour is not equivalent to actually performing it, the predictive validity of intentions is typically significantly greater than that of attitudes towards the behaviour (Ajzen 1988). For this reason, travel agents were asked directly about their intention to refer clients to travel health clinics through their responses to the statement "*I intend to refer my clients travelling to tropical and sub-tropical destinations to a travel health clinic*".

4.6.7 Covariates

Perceived control

Related to self-efficacy is the notion of perceived control. In 1985, perceived control was recognized as a critical factor in health behaviours, like the act of referral, which are considered to be under voluntary control (Godin 1991). As such, the concept was added to Fishbein and Ajzen's Theory of Reasoned Action, which was then renamed the Theory

of Planned Behaviour (Ajzen & Madden 1986). With referral behaviour, for example, a travel agent may feel that as an individual, s/he is perfectly willing and able to refer clients to pre-travel health clinics, however circumstances beyond his/her control may limit their ability to do so. For this reason, travel agents were asked two questions on the pre-intervention questionnaire:

1. *"Does your agency have a policy on providing health advice to travellers?"*
2. *"Do you feel that travel agents receive enough training in issues relating to travel health?"*

It was felt that the presence or absence as well as the nature of an official policy might influence travel agents' perceptions of their ability to refer clients to travel health clinics. If the agency did in fact have a policy on providing health advice, agents were instructed to specify whether this policy was verbal or written and to describe the nature of the policy. Travel agents may also have avoided providing any health information, including referral, if they felt that they had had insufficient training in travel health issues.

Cues to action

While personal beliefs and subjective norms are important cognitive influences in human behaviour, some believe that additional events, or *cues to action*, incite individuals to behave in a particular way. Unfortunately, little research has been conducted into "cues to action" in any behavioural context – neither the type of cues required nor the strength of their association to actual behaviour have been studied. In the case of referral behaviour, two potential cues to action were considered important. First, it was felt that travel agents who had themselves experienced a travel-related illness or knew of someone who had, might be more concerned with travel health issues and therefore more inclined to refer clients to travel health clinics. Second, heightened awareness of travel health issues and hence increased referral, might result from travel agents' participation in other health promotion activities. Therefore, agents were asked to describe the types of activities in which they had been previously engaged.

Habit

Past habit was considered important to explain baseline referral behaviour and as a possible influence on the effectiveness of the intervention. Since the intervention required travel agents to distribute brochures to at-risk clients, they were asked how often they currently provided printed health materials to their clients. In addition, travel agents were asked to specify where they generally referred their clients for travel health information prior to the intervention and again on the follow-up questionnaire.

Demographic characteristics

While attitudes and beliefs are modifiable, and therefore good targets for intervention, stable characteristics may be very useful in identifying subgroups of the population at risk for certain behaviours (Carter 1990). Many factors can be identified that might modify travel agents' referral behaviour and these can be grouped into two classes: factors relating to the travel agency and those relating to the travel agent himself/herself. Agency characteristics examined in this research included:

- the number of years the agency has been in business
- the number of full and part-time agents working in the agency (used as a proxy for the size of the agency)
- the type of agency (independently owned, franchised, chain, other)
- the percentage of agency bookings by type of travel (business, charter, tourist, etc.)
- the percentage of agency bookings by destination
- the availability of Internet access through the agency

Characteristics relating to the agent included:

- the number of years experience as a travel agent
- the number of hours/week worked
- the type of travel agent (manager, owner, salaried agent, commissioned agent)
- the number of clients who book/day
- the frequency of internet use
- the type of travel health information they provided by geographic region (i.e. for each geographic region, the respondent was asked to check the health topics they

generally discussed, including immunization, malaria chemophrophylaxis, sun protection, safe sex, safe eating and drinking practices, health insurance, etc.)

- the type of health information sources they consulted and the frequency with which they consulted them – often, sometimes or never. Information sources included travel clinics, Internet sites, books/magazines, pharmacies, past clients, general practitioners, travel industry software, etc.

4.7 Description of health promotion intervention

Each travel agent who completed and returned the pre-intervention questionnaire received a two-component health promotion intervention consisting of travel health brochures and access to a dedicated Internet site (Appendix 3). Both were developed for the purposes of the study in conjunction with experts in travel medicine at the McGill Centre for Tropical Diseases, with technical support for the website provided by staff of the Division of Clinical Epidemiology at the Montreal General Hospital. Travel health brochures were intended for distribution to clients over the age of 18 years, traveling to areas other than Canada, the United States, Eastern and Western Europe, the Caribbean, Australia and New Zealand. Enough travel health brochures were distributed to each participating travel agent to meet their clientele needs for approximately two months. Quantities were calculated based on information provided in the pre-intervention questionnaire on the number of tickets purchased/day as well as the percentage of clients travelling to tropical and subtropical destinations. Brochures were 3-fold, 4-colour pamphlets that provided general travel health information about why travellers should seek advice from a travel health clinic and what type of traveller should consult a travel health clinic. In addition, information was given concerning what a clinic visit entails, when travellers should consult a clinic relative to their departure date as well as the location and telephone number of travel clinics on the Island of Montreal. Travel agents were also given the address of a website created especially for the study, whose address was not available in the public domain (i.e. the address was not published on any search engine). Similar travel health advice as in the brochure was posted on the website in addition to links to more detailed information on current outbreaks, recommended vaccinations and health

advice available from Health Canada and the Centers for Disease Control and Prevention in the United States.

4.8 Data collection

4.8.1 Study instruments

Study variables were ascertained by two written, self-administered questionnaires (Appendix 1, Appendix 2). A written questionnaire was considered likely to produce a higher rate of response than alternative instruments or methods (e.g. a telephone administered questionnaire). Pre-intervention questionnaires were printed in booklet format: French on one half and English on the other. Post-intervention questionnaires were printed in either French or English and distributed to travel agents according to the language used on the first questionnaire. Both questionnaires were originally developed in English, translated into French, then back-translated to ensure identical meaning of all questions. In order to ensure content validity, questionnaires were developed in conjunction with experts in travel medicine at the McGill Centre for Tropical Diseases and the Centre de médecine de voyage du Québec. In addition, feedback concerning the content and design of study instruments as well as their clarity was solicited from two travel agents not chosen to participate in the study.

The pre-intervention questionnaire, comprising 39 questions required approximately 15-20 minutes to complete. This questionnaire was divided into four thematic sections: 6 questions were related to characteristics of the travel agency, 17 concerned characteristics, attitudes and beliefs of the travel agent, 4 questions related to provision of travel health information and 10 questions concerned referral of travellers to travel health clinics. Two additional questions on the age and sex of the respondent were marked as optional. Of note, two questions appearing on the pre-intervention questionnaire were reconstructions of questions appearing in the published literature: question 29 was developed from information in a report of a recent survey of Australian travel agents by Ivatts *et al.* (1999) while question 37 was inspired by a question asking British travel agents about the training they receive in travel health (Gorman & Smyth 1992).

The post-intervention questionnaire was shorter, containing only 30 questions, and was administered following the health promotion intervention to those agents having previously completed the pre-intervention questionnaire.

4.8.2 First mailing

Two hundred randomly selected travel agencies on the Island of Montréal were sent the first mailing (Appendix 1). The package included a study invitation addressed to managers of selected travel agencies asking that one agent be chosen to represent the travel agency in the study. Also included was the pre-intervention questionnaire plus a study introduction/consent form to be given to the agent designated to complete the questionnaire. A self-addressed, stamped reply envelope was enclosed.

4.8.3 Telephone reminders

Telephone reminders were begun two weeks after the first mailing and continued until the questionnaire was returned, the respondent refused participation, or until a minimum of two reminder calls were made. The calls were made to the manager of each agency to a) ensure receipt of the mailing and to b) confirm participation in the study. In cases where the mailing had not been received, another copy was mailed, except in certain cases where it was faxed to the agency at the request of the study participant.

4.8.4 Delivery of health promotion intervention

Intervention packages were personally delivered to participating agencies beginning March 27, approximately two months after the first mailing. The majority of deliveries were completed within a 2-week period, however some intervention packages were delivered later, following the delayed arrival of additional pre-intervention questionnaires.

4.8.5 Mailing of post-intervention questionnaire

Follow-up questionnaires were mailed on June 7th, approximately 2 months after the intervention. In an effort to minimize losses to follow-up, a $25 incentive was offered for

return of completed post-intervention questionnaires. Telephone reminders were also made beginning June 30th and continued until the questionnaire was returned, the respondent refused participation, or until a minimum of two reminder calls were made.

4.8.6 Estimation of referral rates

Health Canada's directory of travel health clinics was used to identify clinics on the Island of Montreal. Of the 9 travel clinics listed, 3 were ineligible as they serviced very specific populations (University of Montreal students, Air Canada employees and corporate travel groups) and were not open to the general public. Upon consultation with specialists in travel medicine, it was found that one travel clinic had been omitted from the Health Canada list. This clinic was subsequently added to the list of eligible clinics for this study, for a total of 7 clinics. These travel clinics had a wide geographic distribution throughout the Island of Montreal. All agreed to participate.

Each clinic was asked to collect weekly statistics on the source of referral of all first-time patients. Two of the seven clinics were already collecting information on referrals, and only minor modifications to their usual logsheet were necessary. Two other clinics chose to have travellers complete a three-question, self-administered survey upon presentation to the clinic reception. The remaining three clinics completed log-sheets developed for the study in which nurses or travel clinic receptionists verbally asked travellers by whom they were referred to the clinic. As information on the source of referral is very concrete, between-clinic differences in the method of collecting this information were considered to be negligible.

4.9 Analysis

4.9.1 Primary outcome

Data management

Questionnaire data were entered using Excel 7.0 and imported into SAS 6.12 for analysis. A 10% random sample from both questionnaires were double-entered to assess the

accuracy of the database. Variable frequencies (for categorical variables) and ranges (for continuous variables) were examined for impossible or unlikely values.

Descriptive statistics and bivariate analyses

Information on the characteristics of responding travel agents/agencies, including information on their current health practices, was described by frequency and univariate procedures. Similar methodology was used to analyze questions measuring travel agents' satisfaction with the intervention. Fifteen variables, representing modifiable constructs of behaviour, were measured by 5-point Likert scales on both questionnaires. Chi-square tests with α=0.05 were used to verify if travel agents, in general, scored higher on the Likert scale following the intervention.

Analysis of the relationships between "behaviour" variables

A matrix of pairwise Spearman rank correlations between the 15 "behaviour" variables was used to assess their degree of inter-relatedness. Next, factor analysis was employed to assess if individual variables could be grouped into relatively homogeneous subsets, or constructs. Principal components analysis, using the Scree test (Catell 1966), was used to determine the number of factors. Next, factor analysis was performed with a varimax rotation on the factors identified by principal components analysis. A factor loading of at least 4.0 was employed as the cut-off to determine which variables loaded on specific factors. The results of the factor analysis were then compared to the *a priori* construct groupings (i.e. theoretical model for referral behaviour - Figure 5).

Testing the effect of the intervention

Scores were tabulated for each individual by assigning a value of 1 for responses of strongly disagree through to a value of 5 for responses of strongly agree. Responses were then summed across all 15 variables to create a pre-intervention and post-intervention total score for each individual. The mean score on the pre-intervention questionnaire was compared to the mean score post-intervention by Wilcoxon signed rank in order to evaluate the overall impact of the intervention on all underlying constructs of behaviour

change. Sub-scores were similarly constructed for each behavioural construct, using groupings identified by factor analysis. The mean score on each sub-scale was tested for significant differences pre- and post-intervention in order to ascertain the impact of the intervention on particular constructs of behaviour change.

Incomplete data resulted from respondents who had not answered all questions and consequently had missing values for certain variables. Individuals with missing values on items contributing to score calculation were excluded from the main analysis. In a sensitivity analysis, missing values were replaced by the most common value (mode) in cases where less than four score-contributing questions were unanswered.

Regression modelling

Two separate regression analyses were performed. The first regression analysis used a multiple linear regression model to characterize travel agents who were most susceptible to change according to pre-intervention characteristics of the agent or agency. The outcome was taken to be the overall post-intervention score, while the covariates included the pre-intervention score, demographic characteristics of the agent and agency, as well as factors influencing baseline score (i.e. cues to action, perceived control, past habit). Scores on each sub-scale were modelled in similar fashion. Initially, all covariates were included in the models; stepwise regression was performed to reduce the models and identify variables significant at the 0.05 level.

The second analysis was designed to determine whether baseline characteristics were predictive of a post-intervention increase in *actual* referral behaviour, as reported by travel agents on the post-intervention questionnaire (Q26). Travel agents were asked directly whether their referral behaviour had changed following the intervention and by how much. Responses were measured on an ordinal scale – refer much more often than before, a little more often, about the same, a little less often or much less often than before. The original analysis plan included carrying out ordinal multiple logistic regression with a proportional odds model, using Q26 as the outcome measure. However, because no travel agents responded that they referred "less often" or "much less often",

the original 5-category dependent variable was regrouped into 3 categories – refer about the same as before, a little more often and much more often than before. Baseline characteristics as well as variables representing cues to action, perceived control and habit served as independent variables in the model.

The same fifteen independent variables were employed as covariates in both regression models. Four variables were continuous in nature, including the number of full-time employees at the agency - a proxy for agency size, the percent of agency bookings made to the tropics/subtropics, the respondents' years experience as a travel agent, and the number of hours worked/week. Dichotomous variables describing *past habit* included whether or not the respondent distributed printed health information to clients, and whether, when providing a referral, he/she referred clients to travel health clinics. *Perceived control* was assessed by two dichotomous variables measuring whether or not the agency had a policy on providing travel health advice and whether the respondent felt he/she had received enough training in travel health. Two *cues to action*, also represented by dichotomous variables described whether the respondent had ever had a travel-related illness him/herself and whether or not the respondent had participated in previous health promotion programs. Other dichotomous variables included whether the agency had Internet access, was independently owned and whether the respondent was the owner/manager of the agency. Males served as the reference category for sex; age was regrouped into 3 evenly-distributed categories surrounding the mode: less than 40 years, 40-49 years, and greater than 50 years of age.

4.9.2 Secondary outcome

As an external measure of the effect of the intervention, information was collected on the proportion of travellers attending travel health clinics who were referred to the clinic by their travel agent. Information was collected on a weekly basis, both before and after the health promotion intervention, by seven travel health clinics on the Island of Montreal. Interrupted time series analysis was used to estimate the degree of change in intercept and/or in the slope of the regression line after the intervention according to the following equation (Mohr 1992):

$$Y_t = \alpha + \beta X_t + \beta_T I_t + \beta_2 X_t I_t + u_t \qquad (2)$$

where Y_t is the weekly referral rate, X_t is the week and the variable I_t is the intervention dummy variable, which takes the value of 0 for all weeks before the intervention and 1 thereafter. The subscript *t* indicates subsequent weeks and *u* denotes random error. Before the intervention, when I_t=0, the equation reduces to:

$$Y_t = \alpha + \beta X_t + u_1 \qquad (3)$$

Therefore, prior to the intervention, the intercept of the regression line is denoted by α and the slope by β enabling a regression line for the pre-intervention portion of the graph to be drawn. β_T in equation (2) represents the change in intercept following the intervention and β_2 denotes a change in slope. From these values, the regression line can be drawn for the post-intervention period.

4.10 Ethics approval

The Research Ethics Committee of the Montreal General Hospital Research Institute granted ethical approval for this study on November 24, 1999 (Appendix 4). Three amendments to the original study protocol were subsequently requested, namely 1) to enroll a random sample of travel agencies rather than the entire population on the Island of Montreal, 2) to add a telephone reminder following mailing of questionnaires in order to improve study participation rates and 3) to offer $25 as an incentive to participating travel agents to complete and return the post-intervention questionnaire. All amendments were deemed ethically acceptable.

5 RESULTS

Two previous studies elicited travel agents' views about the provision of travel health information to clients (Gorman & Smyth 1992, Ivatts *et al.* 1999). Over half of Australian travel agents indicated a lack of travel health information available to them (Ivatts *et al.* 1999) while British travel agents were critical of the quality of health information provided in travel industry brochures and of their own training in travel health issues (Gorman & Smyth 1992). When asked what would best assist them in providing travel health information, the two most common answers were for more general information brochures for their clients and for referral brochures listing GPs or medical centers well informed on travel health issues (Ivatts *et al.* 1999).

Therefore, we designed a primary epidemiologic study to evaluate the effect of two health promotion tools (referral brochures and an Internet site) on the attitudes and practices of travel agents. The following manuscript describes the results of this research. The article will be submitted to the Journal of the American Society for Tropical Medicine and Hygiene in September, 2000. An abstract, based on this information, has been accepted for presentation at the 49th Annual Meeting of the American Society for Tropical Medicine and Hygiene.

5.1 Manuscript #2:

Increasing referral of at-risk travellers to travel health clinics: Evaluation of a health promotion intervention targeted to travel agents

L. MacDougall[1], T.W. Gyorkos[1,2], K. Leffondré[2], M. Abrahamowicz[1,2], D. Tessier[3], B. Ward[4], J.D. MacLean[4]

[1] Department of Epidemiology and Biostatistics, McGill University, Montréal, Québec
[2] Division of Clinical Epidemiology, Montréal General Hospital, Montréal, Québec
[3] Centre de médecine de voyage du Québec, Montréal, Québec
[4] McGill Centre for Tropical Diseases, Montréal General Hospital, Montréal, Québec

(Short title: Promoting travel agent referrals to travel clinics)

Correspondence and proofs:

Dr. Theresa Gyorkos
Division of Clinical Epidemiology, Room L10-420,
Montréal General Hospital, 1650 Ave. Cedar
Montréal, Québec, Canada H3G 1A4;
E-mail: mdgt@musica.mcgill.ca
Tel: 514-937-6011 ext 4721; Fax: 514-934-8293

Introduction

Health-related risks are often associated with travel to tropical and sub-tropical destinations, yet many visitors travel unprepared. While statistics on travel-related illness are not routinely collected, an appreciation of the magnitude of illness can nonetheless be obtained from individual studies among selected traveller groups. Morbidity estimates of this type range from 15% to 54% for groups of travellers to various types of tropical and subtropical destinations.[1-4] Most travellers will experience only minor symptoms, but some will develop severe morbidity, with some cases resulting in death.

To compound matters, over the past several decades, an overall rise in short-term business travel and travel for tourism has sparked increases in travel to exotic destinations and a concomitant rise in the number of people exposed to travel-related illnesses. Figure 1 depicts this increasing trend in tourist arrivals to selected tropical and subtropical destinations since 1990.[5]

Travellers often consult general practitioners, travel agents, embassies, books, magazines and brochures for pre-travel health advice. Other commonly consulted sources include Internet sites and specialized travel clinics as well as friends and family members. Unfortunately, the quality of information they provide is extremely variable.[6-11] Recently, several studies have highlighted the benefits of travel health clinics over more conventional methods of health information delivery. In a study on malaria, travel health clinics or public health centres were less likely to prescribe an inappropriate chemoprophylactic regimen than were family practitioners (36% v. 76%).[12] Travellers attending travel health clinics were also less likely to require consultation with a doctor upon their return home.[4] In addition, clinic-users were more likely to be travelling to high-risk destinations, but reported a significantly lower rate of trip-related illness than travellers seeking advice from a general practitioner (22% vs. 48%).[4] However, estimates from two Canadian studies suggested that under 10% of travellers to Mexico and the Dominican Republic and 11% of travellers to India had consulted a travel health clinic prior to departure. (Provost S, unpublished data),12

As most travel-related illnesses are preventable, new strategies and partnerships are required to ensure that travellers are more knowledgeable about, and better protected against, the health risks of travel. To date, travel agencies afford the greatest resource opportunity for pre-travel contact with travellers, particularly those whose destinations include tropical and subtropical regions. According to estimates from a major North American airline, travel agencies are still the purchase-point of choice for between 75 to 80 percent of their customers, despite the availability of self-directed electronic ticketing.[13] In fact, the travel agent has been cited as the most consulted source of pre-travel health advice by studies in the UK and Canada.[14,(Provost S, unpublished data)] Similar findings among Australian travellers to Bali show that 12% obtained travel health advice solely from their travel agent, and 71% obtained pre-departure health advice from travel agents in addition to information from other sources.[15] While they constitute an important source of health advice for many travellers, concerns have been raised regarding the quality of the advice given by travel agents[7,16,17] as well as the availability of health resources appropriate to their needs.[18] Indeed, travel agents themselves have expressed concern over a lack of training and knowledge of travel health issues.[4] Despite these concerns, travel agents have expressed a willingness to become more involved in promoting travel health, provided they have access to more standardized *general* health information from reputable sources as well as referral information for the most appropriate health services.[11]

Travel agents are in a remarkable position to partner with travel medicine specialists in the promotion of healthier travel. Recent work has demonstrated that receiving a referral from a travel agent was the most important predictor of consulting a travel health clinic prior to departure. In fact, compared to travellers receiving no such referral, those who had been referred to a travel clinic by their travel agent had an 8-fold increased odds of actually consulting one, after controlling for potential confounding variables (Provost S, unpublished data). In addition, travel agent referrals were especially important determinants of consultation in travellers under 45 years of age and travellers who had never before consulted a travel health clinic (Provost S, unpublished data).

Objectives

In light of these findings, this research targeted a health promotion intervention to travel agents that specifically promoted the referral of at-risk travellers to travel health clinics. Information concerning the knowledge, attitudes, and behaviours of travel agents before and after a health promotion intervention were compared. Using a modified version of Ajzen's Theory of Planned Behavior (Figure 2), shifts in the psychological constructs that influence travel agents' referral behaviour were evaluated following the intervention. Self-reported changes in actual referral behaviour were also examined. As an external indicator of effect, the proportion of travellers referred by a travel agent was monitored weekly at travel health clinics in order to detect any short-term changes in referral rate following the intervention.

Methods

Study design and population

The study was conducted from December 1999 to July 2000. Ethics approval was granted by the Research Ethics Committee of the Montreal General Hospital Research Institute. Two hundred travel agencies were randomly selected from all agencies listed on the on-line Yellow Pages directory for Montréal, Canada. Agency managers were mailed a covering letter explaining the study, a consent form, a pre-intervention questionnaire and a stamped self-addressed reply envelope. Managers were asked to designate one representative from their agency to participate in the study. This agent was to have been in practice for a minimum of one year, and serve travellers to destinations considered to be more at risk for travel-related illness (all destinations except Canada, the United States, Eastern and Western Europe, the Caribbean, Australia and New Zealand). Travel agents who consented to return the pre-intervention questionnaire received a two-component health promotion intervention and were invited to complete a post-intervention questionnaire 2 ½ months later, for which a $25 incentive was offered. Telephone reminders were made following mailing of both questionnaires and continued until the questionnaire was returned, the respondent refused participation, or until a minimum of two reminder calls were made. Questionnaires and intervention materials were developed

in conjunction with experts in travel medicine at the McGill Centre for Tropical Diseases and the Centre de médecine de voyage du Québec as well as two local travel agents not selected to participate in the study.

All seven pre-travel health clinics on the Island of Montreal which service the general public agreed to collect weekly statistics on the source of referral from all first-time patients. Data collection was restricted to first-time patients to avoid double counting of travellers. This would occur if a traveller made several trips to the clinic during the course of pre-departure counselling for a single trip (as is usually the case). Each week, the proportion of first-time travellers who were referred by a travel agent was calculated based on a demominator of all first-time patients referred from any source. A proportion was used rather than the numerator alone in order to account for seasonal changes.

Materials: Description of Health Promotion Intervention

Brochures were 3-fold, 4-colour pamphlets that provided general travel health information about why travellers should seek advice from a travel health clinic and what type of traveller should consult one. In addition, information was given concerning what a clinic visit entails, when travellers should consult a clinic relative to their departure date as well as the address and telephone number of travel clinics on the Island of Montreal. Similar travel health advice was posted on a dedicated website (i.e. one whose address was not published on any search engine) with additional links to more detailed information on current outbreaks and country-specific vaccine recommendations from Health Canada and the Centers for Disease Control and Prevention (USA). A two-month supply of brochures was distributed to each participant based on the average number of tickets sold per week and the proportion of ticket sales to tropical or subtropical destinations, as reported by travel agents on the pre-intervention questionnaire.

Study Variables

All study variables were ascertained by written, self-administered questionnaires. Variables were either measured before distribution of the intervention materials, after distribution, or at both times. Given that referral can be thought of as an action under

voluntary control, the model developed for this study represents a modified version of Ajzen's Theory of Planned Behaviour[19], and incorporates constructs from other well-known models, where appropriate. The working model includes constructs of perceived control, subjective norms, attitude towards referral, cues to action, past habit, and intention, as well as characteristics of the travel agency and the travel agent him/herself (Figure 2). The intervention was expected to affect attitudes, intention and subjective norms. Cues to action, perceived control and past habit were considered important explanatory variables.

Principal outcome measures: Five-point Likert scales were used to measure modifiable constructs of behaviour change and were operationalized as shown in Table 1. Travel agents were asked to state their degree of agreement with these statements on both the pre-and post-intervention questionnaires. Scores were tabulated for each individual by assigning a value of 1 for responses of strongly disagree through to a value of 5 for responses of strongly agree. Responses were summed across all 15 variables to create a pre-intervention and post-intervention *overall* score. Sub-scores were similarly constructed for each behavioural construct, using groupings identified by factor analysis (see results – 'factor analysis of behavioural constructs'). Changes in scores were used to measure the impact of the intervention.

One of the two variables describing *past habit* – whether a travel agent's usual place of referral was a travel clinic – was asked on both pre- and post-intervention questionnaires in order to measure change from baseline.

Variables measured pre-intervention only: *Cues to action* included information on whether travel agents had experienced a travel-related illness or knew someone who had, as well as whether they had participated in previous health promotion activities for travel agents. *Past habit* was described by whether a travel agent's usual place of referral was a travel clinic as well as whether they already provided written health information to their clients. The presence or absence of an agency policy on providing health information to clients was used to measure *perceived control* in addition to whether the respondent felt

s/he had received enough training in travel health issues. Information was also collected on *agency characteristics* including number of years in business, number of full and part-time staff (used as a proxy for the size of the agency), type of agency (independently owned, franchised, chain, other), percentage of agency bookings by type of travel (business, charter, tourist, etc) and by destination, as well as the availability of internet access through the agency. *Characteristics of the participating travel agent* were also assessed and included information on number of years experience as a travel agent, number of hours/week worked, position in the agency (manager, owner, salaried agent, commissioned agent, etc), number of clients booking/day, and frequency of internet use. In addition, travel agents were asked to detail the type of travel health information they provided by region, as well as the type and frequency of health information sources they consulted.

Variables measured post-intervention only: Travel agents were asked to report the amount of brochures they had been able to distribute as well as the number of times they had used the internet site. Satisfaction with the intervention was measured by their interest in continuing to supply their clients with brochures or in continued use of the website. Travel agents also reported on the usefulness of the information provided. In addition, travel agents were asked directly whether their referral behaviour had changed following the intervention and by how much. Responses were measured on an ordinal scale – refer much more often than before, a little more often, about the same, a little less often or much less often than before.

Sample size

The required sample size was estimated using the method proposed by Connett *et al.* (1987) who derived a formula for a modified McNemar test applied to pair-matched data. Sample size calculations aimed at ensuring 80% power to detect at least a 20% positive change in travel agents' attitudes and beliefs (i.e. at least 20% of respondents moving up the Likert scale by at least one category between pre- and post-intervention), given a type I error α=0.05. The calculation also allows for negative change on the Likert scale in 5% of travel agents. Using the unconditional formulation for matched binary data, a sample

size of 85 travel agents was estimated, a slight overapproximation of the sample size required for matched ordinal data.[22-24]

Analysis

Frequency and univariate procedures were used to generate descriptive statistics for all variables collected. Fifteen variables, representing modifiable constructs of behaviour (Table 1), were analyzed by factor analysis to determine whether they could be statistically grouped into relatively homogeneous subsets. Principal components analysis was performed, using the Scree test, to determine the number of factors.[25] Factor analysis was subsequently performed with a varimax rotation on factors initially identified by principal components. A factor loading cut-off of at least 0.4 was employed as a criterion to determine which variables loaded on specific factors. The results of factor analysis were then compared to the *a priori* construct groupings depicted in Figure 2.

The mean difference between post- and pre-intervention overall score was examined by the Wilcoxon signed rank test in order to evaluate the general impact of the intervention. Scores for each sub-scale, corresponding to a particular factor, were similarly tested in order to ascertain the impact of the intervention on specific constructs of behaviour change. Individuals with missing values on items contributing to score calculation were excluded from the main analysis. In a sensitivity analysis, missing values were replaced by the most common value (mode) in cases where less than four score-contributing questions were unanswered.

Two separate types of regression analyses were performed. The first used a multiple linear regression model to characterize pre-intervention characteristics of the agent or agency that were independently associated with a stronger effect of the intervention. The outcome was the overall post-intervention score, while the covariates included the pre-intervention score, demographic characteristics of the agent and agency, as well as factors influencing cues to action, perceived control, and past habit. Scores on each sub-scale were modelled in a similar fashion. Initially, all covariates were included in all models;

stepwise regression was performed to reduce the model and identify variables significant at the 0.05 level.

The second type of analysis was designed to determine whether baseline characteristics were predictive of a post-intervention increase in *actual* referral behaviour, as reported by travel agents on the post-intervention questionnaire. Using this as the outcome measure, 3-category ordinal logistic regression (using a proportional odds model) was carried out to compare those who referred much more often than before, a little more often than before and about the same as before (no travel agents reported referring less or much less). Baseline characteristics as well as variables representing cues to action, perceived control and habit served as independent variables in the model.

The same fifteen independent variables were employed as covariates in both regression models. Four variables were quantitative, including the number of full-time employees at the agency - a proxy for agency size, the percent of agency bookings made to the tropics/subtropics, the respondents' years experience as a travel agent, and the number of hours worked/week. Dichotomous variables describing past habit included whether or not the respondent distributed printed health information to clients, and whether, when providing a referral, he/she referred clients to travel health clinics. Perceived control was assessed by two dichotomous variables measuring whether or not the agency had a policy on providing travel health advice and whether the respondent felt he/she had received enough training in travel health. Two cues to action, also represented by dichotomous variables described whether the respondent had ever had a travel-related illness him/herself and whether or not the respondent had participated in previous health promotion programs. Other dichotomous variables included whether the agency had Internet access, was independently owner and whether the respondent was the owner/manager of the agency. Males served as the reference category for sex; age was regrouped into 3 evenly-distributed categories surrounding the mode: less than 40 years, 40-49 years, and greater than 50 years of age.

Lastly, interrupted time series analysis was used to detect an effect of the intervention on referral rates.[26]

Questionnaire data were entered using Excel 7.0 and imported into SAS 6.12 for analysis. A 10% random sample of both questionnaires were double-entered to assess the accuracy of the database.

Results

Of the 200 travel agencies contacted, 17 were ineligible to participate because they had moved out of the study area, did not service travellers to tropical or subtropical destinations, had gone out of business or were a travel wholesaler with no direct contact with the public. Among the 183 eligible participants, 78 (43%) returned the pre-intervention questionnaire, 37 (20%) refused, and 68 (37%) did not complete the questionnaire. Of 78 initial participants, 68 (87%) completed the post-intervention questionnaire. Two pairs of subjects were excluded since respondents to the post-intervention questionnaire were different from baseline.

Pre-intervention characteristics: Table 2 describes baseline characteristics of participating travel agents. Of the 78 initial respondents, most were female (62.2%), between the ages of 40 and 49 years and 67.5% were the owner or manager of the agency in which they worked. Eighty-six percent of travel agents had access to the internet at work, and of these, 65.6% used it more than 1-2 times per day. On average, the travel agents sold 11.7 ± 9.8 tickets a week and worked 43.3 ± 9.4 hours/week. Travel agents had an average of 15.4 years experience. Table 3 describes characteristics of the travel agency in which participants worked. Sixty-five percent of travel agents represented agencies that were independently owned. While 71.4% of agencies reported having a policy on providing travel health information, only 20.4% of these policies were written. Of those who described their policy (n=33), less than 40% mentioned referral to a travel clinic, general practitioner or community health clinic (data not shown). Most of the remaining policies dealt with alerting the client to the possibility of vaccination requirements, advising about food and water precautions, and recommending health insurance. Travel

agencies had been in business for a mean of 15 years and employed an average of five full-time and three part-time travel agents. On average, 56.6% of travel agency bookings were for tourism (excluding charter and student travel), 24.3% for business travel and 19.3% for other types of travel, including charter and student travel. Ticket sales to the tropics/subtropics represented an average of 40% of all sales, with Mexico and Central and South America the most popular destinations.

In general, few travel agents *often* consulted a specific health information source, as evidenced by responses ranging from only 5% to 23% for particular sources (Table 4). However, those who consulted *often* tended to get health information from travel health clinics (23%), tour operators (23%), the travel information manual (TIM) (23%) and embassies or consulates (19%). More travel agents indicated that they *sometimes* sought information on travel health. The majority of travel agents *sometimes* used past clients (55%), books and magazines (50%), or travel health clinics (49%) as a source of travel health advice. Most travel agents indicated that they *never* consulted physicians (64%), radio/television programs (69%), travel industry computer software (73%) or internet web sites (81%) for travel health information.

On average, over 90% of travel agents discussed health insurance with their clients travelling to tropical or sub-tropical destinations (Table 5). However, discussion of other health-related topics was less frequent. Safe eating and drinking practices were discussed by an average of 71% of travel agents regardless of travel destination, but were most often discussed with travellers to Mexico. On average, just over half of travel agents reported discussing information about vaccines, however this was more common with travellers to Africa (71%) and India (73%). Overall, few travel agents discussed the need for anti-malaria medication (31%). Less than 50% of travel agencies ticketing to Africa reported discussion of malaria chemoprophylaxis. Chemoprophylaxis was discussed least often with travellers to Mexico (9%) and Central America (16%).

Factor analysis of behavioural constructs: Factor analysis suggested factor groupings similar to those proposed by the theoretical model. Four factors were identified by the

Scree test, which together accounted for about 89% of the overall variance in 15 variables. Sensitivity analysis showed no effect of replacing missing values and the results presented are for the unreplaced case. One factor group included variables representing constructs of perceived susceptibility, perceived severity, self-efficacy and expected benefits of referral (Table 1). This first factor was termed 'Attitude towards Referral'. However, questions concerning 'Barriers to Referral' were classified as a *separate* factor rather than as a component within 'Attitude toward Referral', as suggested by the theoretical model. Variables representing 'Subjective Norms' and 'Intent to Refer' formed, as expected, the third and fourth groupings. Apart from the emergence of barriers as a separate grouping, two discrepancies existed between the factor analysis groupings and the *a priori* model. One of the self-efficacy variables "I feel comfortable talking to my clients about health issues relating to travel" was grouped with the 'Subjective Norms' factor while an expected benefit of referral "I believe that referring clients to travel health clinics will reduce their risk of travel-related disease" was grouped with the 'Intent to Refer' factor. Since it was clear from the results of factor analysis that barriers should be considered a separate construct, subsequent analyses were conducted using construct groupings identified by factor analysis.

Effect of the intervention: Table 6 displays the average difference in individuals' overall and factor-specific scores between pre-intervention and post-intervention assessments. Post-intervention improvements, as indicated by positive mean differences, are seen in the overall score and subscores for barriers, intent and attitude. While mean differences were small, the intervention was effective, producing statistically significant increases in the overall score ($p=0.03$) and in the subscore 'Intent to refer' ($p=0.01$). The intervention had a borderline effect on 'Barriers to Referral' ($p=0.09$), and no effect was observed with respect to 'Subjective Norms' ($p=0.99$).

Regression analyses: Respondents did not differ significantly in their overall post-intervention score according to any measured characteristic. However, two post-intervention sub-scores tended to increase as a function of *past habit* (Table 7). Travel agents with past referral experience to travel health clinics were more likely to have a

better attitude towards referral following the intervention (p=0.032), even when adjusted for the pre-intervention score. As well, their post-intervention score was greater for barriers associated with referral (p=0.019), indicating that they perceived them to be of less importance following the intervention. Older agents had greater intention to refer travellers following the intervention (p=0.015). In addition, the greater the number of hours a travel agent worked/week, the greater their increase in score for 'Attitude towards referral' following the intervention (p=0.018).

Ordinal regression of *self-reported* referral behaviour revealed that respondents who were the owner or manager of an agency were 7 times more likely than regular travel agents to report an increase in referral behaviour following the intervention (p=0.009 in Table 8).

Comparison of referral rates: Weekly collection of referral rates by travel health clinics produced the graph shown in Figure 3. Visual inspection of the pre- and post-intervention lines does not indicate an increase in proportions of first-time patients referred by travel agents. This was statistically confirmed by interrupted time series analysis, where both the post-intervention change in intercept and change in slope were non-significant (p=0.22 and p=0.43, respectively). On average, across all pre-intervention weeks, only 7.8% of first-time patients visiting a travel health clinic reported receiving a referral from their travel agent. This figure dropped to 5.3% post-intervention.

Post-intervention review: Out of 68 travel agents who completed the post-intervention questionnaire, 41% reported distribution of all or most of the study brochures, 40% had distributed some and 19% had distributed few or no brochures. The most frequent reason for poor distribution was a lack of ticket sales to tropical or subtropical destinations during the intervention period. Ninety percent of travel agents found the information in the brochure very or extremely useful and 76% commented that, in their opinion, their clients had also found the information very or extremely useful. When asked about the manner in which brochures had been distributed, approximately half (49%) had included a brochure inside customers' tickets, regardless of whether or not brochures were also put on display at the agency. The method of distribution (display alone vs. provided inside

ticket) was not related to either the proportion of brochures actually distributed (p=0.61) or self-reported convenience of distribution (p=0.23).

While 86% of travel agents reported internet access, only 20% of post-intervention respondents had visited the study web page. Of these, most accessed links provided from the study web page to more specific sources of travel health information. Some travel agents also indicated that while they themselves did not use the web page, they passed the address on to their clients. Overall, travel agents preferred the use of brochures alone (57%) to either the web site alone (2%) or a combination of both information delivery mechanisms (40%). Ninety percent of travel agents were interested in continuing to provide clients with the travel health brochures used in the study, while only 53% were interested in continued use of the website.

Overall, 69% of travel agents responding to the follow-up questionnaire believed that their knowledge of travel health issues had improved as a result of the study. When asked to compare their current referral behaviour to before the intervention, 24% reported referring travellers to clinics much more often than before, 41% a little more often than before and 35% about the same as before. When asked where they generally referred travellers, travel agents were significantly more likely to report referral to travel health clinics following the intervention (p=0.001) than on an identical question asked on the pre-intervention questionnaire.

Discussion

The intervention produced a small, but statistically significant, positive shift in travel agents' attitudes and beliefs towards referral. In effect, travel agents improved their overall score by 2.6% from pre- to post-intervention. While indicating a limited effect of the intervention, this small gain may be partially accounted for by the fact that many respondents had high pre-intervention scores, leaving little room for score improvement. Of the constructs of behaviour change examined, the intervention seemed to have the most important effect on travel agents' intent to refer clients to pre-travel health clinics. This is encouraging, as 'Intent' has been described as the most important predictor of

actual referral behaviour.[27] In fact, in the present study, actual increases in referral behaviour were self-reported by 65% of study participants. In addition, managers or owners of travel agencies were 7 times more likely to report such an increase than salaried or commissioned travel agents. While this may be a reflection of social desirability bias, it does suggest that future health promotion activities might target this group with greater success.

While the study's response rate (43%) was similar to a previous mail survey of travel agents[28], it lacked sufficient power to determine the extent to which pre-intervention covariates influenced the effectiveness of the intervention. However, despite this limitation, several characteristics were found to significantly predict higher post-intervention scores. Older travel agents were more likely to improve their intent to refer travellers post-intervention, suggesting that younger travel agents were already more sensitized to travel health issues at baseline. Busier travel agents, as determined by the number of hours worked per week, tended to have greater positive shifts in attitude towards referral following the intervention. This may indicate a larger effect of the intervention on busier travel agents who were less likely to take the time to provide referrals prior to the intervention. Perhaps most importantly, previous experience with referral to travel health clinics predicted significantly higher post-intervention scores. Therefore, the intervention had a 'booster' effect, serving more as a reminder to those already referring to travel health clinics. This suggests the need for other types of health promotion activities for those with little or no referral experience with travel health clinics. In addition, educational activities that incorporate health issues in the curriculum during travel agent training and certification, or subsequently during refresher courses, may provide sufficient knowledge to underscore the need for referral and to develop regular referral habits.

Early education on travel health issues is further indicated by the fact that while travel agents routinely provide advice on health insurance, other health issues, especially the need for anti-malarial chemophrophylaxis, are rarely discussed. The value of some sources of health information *often* consulted by travel agents, such as embassies, the

Travel Information Manual and tour operators, have previously been called into question.[6,18] A current evaluation of the quality of these sources of health information is warranted given their high frequency of use. Travel agents should also be provided with access to health information from expert sources, such as government health organizations and the World Health Organization.

While travel agents were generally enthusiastic about providing travel clinic referrals to their clients, some were reluctant to participate in a study due to extremely busy schedules. The time limitations of travel agents suggest the need for easy-to-use referral materials rather than a barrage of specific travel health information. The challenge is to help travel agents identify which travellers must be referred and to ensure they have contact information for local travel health clinics. It is noteworthy that despite a high percentage of agencies with Internet access, respondents overwhelmingly preferred the use of paper brochures. Comments from travel agents suggested that they used the website address more as a tool to give to their clients rather than for their own reference and use. Poor use of the web site by travel agents may be a further reflection of the extra time costs involved in accessing the information. Given that brochures were preferred, it is encouraging that almost half of travel agents included them inside their customer's airline ticket instead of simply putting them on display.

The sample population represents a select group of travel agents, presumably those with some interest in travel health issues. Therefore, the results should not be generalized, but rather used as guidance for future studies in this area. While 65% of study participants self-reported increases in referral to travel health clinics, this increase was not detected in the data collected at the study clinics. This may be due to a low potency of the intervention, because only a small number of travel agents on the Island of Montreal actually received the intervention materials and we were unable to identify travellers who were served by these specific agents. In addition, travellers may have been referred to the clinic by other sources in addition to their travel agent and may recall someone other than their travel agent when asked by clinic staff. Finally, there is likely an important lag time

between ticket purchase and clinic appointments, which may not have been captured by the short follow-up period.

Given that the intervention was nevertheless effective in improving travel agents' intent to refer travellers as well as their self-reported rate of referral, further investigation is merited to determine its effect on actual referral behaviour. Additionally, a more widespread intervention, targeting all travel agents in a given area, would likely have a more potent effect on referral rates collected at clinics.

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Table 1: Operationalization of modifiable constructs of referral behaviour

Construct	Question Statement
Perceived Susceptibility*	I am concerned about the health of my clients travelling to tropical and subtropical locations
Self-efficacy*	I can promote healthier travel among my clients
	I feel comfortable talking to my clients about health issues relating to travel
Perceived Severity*	I believe that travel-related illnesses can have serious health consequences for my clients
Expected benefits of referral*	I believe that clients who stay healthy on their trip are more likely to travel again
	By promoting healthy travel, I will add value to my service as a travel agent
	I believe that referring clients to travel health clinics will reduce their risk of travel-related disease
Expected barriers to referral	I am too busy to refer clients for pre-travel health advice
	I don't know where to refer clients for pre-travel health advice
	I can't tell who needs to be referred and who doesn't
	I am worried that if I suggest that there are health risks associated with their trip my clients will not buy a ticket
Subjective Norms	My clients expect me to deliver general health advice
	The travel agency should be a place that promotes the health of travellers
	It is part of my job to promote healthy travel among my clients
Intent to refer	I intend to refer my clients travelling to tropical and sub-tropical destinations to a travel health clinic

*Factor analysis provided the basis for these 4 constructs to be grouped into one factor grouping – termed **'Attitude towards referral'**.

Table 2: Baseline characteristics of participating travel *agents*

Travel Agent Characteristics	Number of responses (n=78)	Percent or mean (SD*)
Sex	74	
Female		62.2
Age	76	
<30 years		11.8
30-39 years		23.7
40-49 years		32.9
50-59 years		19.7
>59 years		11.8
Position	77	
Owner/manager		67.5
Salaried travel agent		23.4
Other		9.1
Internet Use	77	
No access		14.3
Access	64	85.7
Less than 1-2 times/day		9.4
1-2 times/day		25.0
More than 1-2 times/day		65.6
Mean years of experience	77	15.4 (11.7)
Mean hours/week worked	73	43.3 (9.4)
Mean # tickets sold/week	67	11.7 (9.8)

* SD=standard deviation

Table 3: Characteristics of participating travel *agencies*

Travel Agency Characteristics	Number of responses (n=78)	Percent or mean (SD*)
Type of Agency	78	
Independent		65.4
Chain/Franchised		29.5
Other		5.1
Policy on health information	77	
No**		28.6
Yes		71.4
Verbal		79.6
Written		5.6
Both		14.8
Internet Access	77	85.7
Mean *percent* sales to tropics	74	39.6 (25.8)
Mean *percent* of overall bookings	78	
Business travel		24.3 (22.3)
Tourist travel		56.6 (27.8)
Other travel		19.3 (21.3)
Mean # years in business	74	15.3 (10.2)
Mean # full-time staff	78	5.1 (7.1)
Mean # part-time staff	78	2.8 (3.8)

* SD=standard deviation

**includes 2 respondents who didn't know if the agency had a policy or not

Table 4: Sources of travel health information and frequency of use

Source of travel health information	Number of responses (n=78)	Frequency of use (%)		
		Often	Sometimes	Never
Travel health clinics	70	23	49	28
Tour operators	64	23	38	39
Travel Information Manual (TIM)	66	23	32	45
Embassies/Consulates	69	19	39	32
Written travel health brochures	58	17	40	43
Travel industry computer software	63	13	14	73
Past clients	67	12	55	33
Other travel agents	53	9	49	42
Family/friends	64	9	39	52
CLSC	65	8	40	52
Physician	64	8	28	64
Internet web site	47	8	11	81
Public health department	64	6	47	47
Books/magazines	56	5	50	45
Radio/TV programs	57	5	26	69

Table 5: Proportion (%) of travel agents who discuss health information with their clients, by topic and destination.

Topic \ Destination	Africa (n=62)*	Asia/S. Asia/ S.E. Asia (n=63)*	India (n=48)*	Mexico (n=67)*	Central America (n=67)*	South America (n=67)*	Average
Health insurance	88.7	86.2	93.8	91.0	91.0	92.5	90.5
Safe eating and drinking	64.5	60.8	66.7	85.1	79.1	67.2	70.6
Vaccine	71.0	64.0	72.7	29.9	41.8	55.2	55.8
Sun protection	35.5	27.5	33.3	68.7	58.2	49.3	45.4
Mosquito protection	43.5	31.7	31.3	29.9	35.8	32.8	34.2
Anti-malaria medication	48.4	37.6	45.8	9.0	16.4	26.9	30.7
First aid kits	19.4	17.5	14.6	16.4	17.9	19.4	17.5
Safe sex	9.6	16.4	16.7	16.4	16.4	17.9	15.6
No health info discussed	9.7	12.7	8.3	6.0	7.5	10.4	9.1

* n represents the number of travel agencies who ticket to a particular destination.

Table 6: Mean difference* between pre- and post-intervention scores - overall score and construct sub-scores

Scale (# questions)	Number of responses (n=66)†	Mean difference	Standard error	p-value	Mean change in score/ question
Overall (15)	55	1.82	0.72	**0.03**	0.12
Barriers to referral (4)	58	0.66	0.33	0.09	0.17
Subjective norms (4)	63	-0.03	0.32	0.99	-0.01
Intent to refer (2)	62	0.55	0.21	**0.01**	0.28
Attitude towards referral (5)	63	0.62	0.37	0.14	0.12

*calculated using the Wilcoxon signed rank test

†n = # of subjects with complete responses on scale items for both pre- and post-intervention questionnaires. Sixty-eight post-intervention questionnaires were received, however 2 were excluded, as respondents were different from baseline.

Table 7: Stepwise multiple regression models of behavioural constructs – overall score and sub-scores (a)

Dependent variable	Independent variables	β (b)	SE (c)	p-value (d)
Post-intervention overall score	Pre-intervention score	0.665	0.087	**<0.001**
	Age (years)	1.450	0.881	0.107
	Internet access (yes/no)	-3.512	2.047	0.093
Post-intervention sub-score for "Intent to refer"	Pre-intervention score	0.146	0.071	**0.045**
	Age	0.379	0.151	**0.015**
Post-intervention sub-score for "Attitude towards referral"	Pre-intervention score	0.400	0.096	**<0.001**
	Hours worked per week	0.082	0.033	**0.018**
	Internet access	-1.530	0.833	0.073
	Past clinic referral	1.450	0.656	**0.032**
Post-intervention sub-score for "Subjective Norms"	Pre-intervention score	0.646	0.130	**<0.001**
	Independently owned	-1.128	0.725	0.127
	Previous travel illness	-1.296	0.715	0.077
Post-intervention sub-Score for "Barriers to referral"	Pre-intervention score	0.386	0.098	**<0.001**
	Policy exists	1.116	0.685	0.110
	Age	0.620	0.359	0.091
	Past clinic referral	1.562	0.639	**0.019**

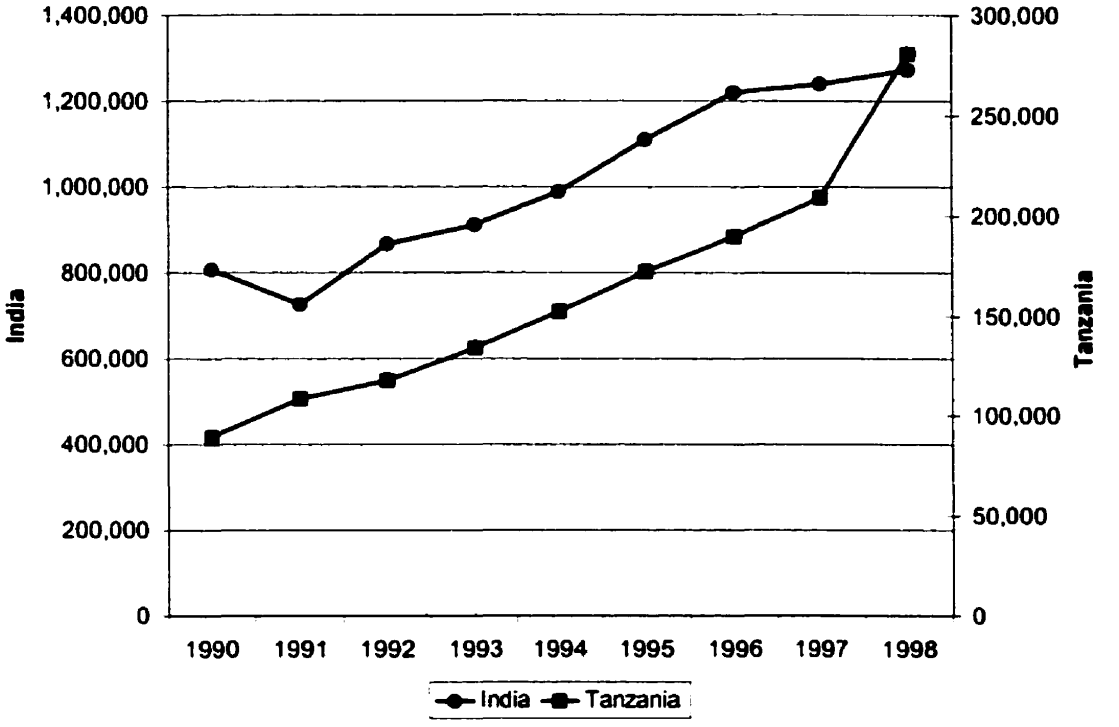
(a) Models selected using stepwise selection with $p<0.15$ criterion for entry.
(b) Estimated change in dependent variable associated with a 1 unit increase in a given independent variable, adjusted for other variables shown for the same model.
(c) SE=standard error
(d) p-value for the F-test of the null hypothesis of no association.

Table 8: Ordinal regression of self-reported changes in referral behaviour

	β	SE (a)	OR (b)	95% CI (c)
Agency characteristics				
# full time staff	-0.063	0.092	0.94	(0.78,1.13)
Independently owned	0.182	0.795	1.20	(0.25,5.69)
% bookings to tropics	-0.005	0.012	1.00	(0.97,1,02)
Internet access	0.758	0.956	2.13	(0.33,13.90)
Agent characteristics				
# years experience	0.008	0.031	1.01	(0.95,1.07)
Hours worked per week	-0.049	0.035	0.95	(0.89,1.02)
Owner/manager	1.981	0.758	**7.25**	**(1.64,32.06)**
Age	0.420	0.480	1.52	(0.59,3.90)
Sex	0.651	0.744	1.92	(0.45,8.24)
Perceived control				
Policy exists	-1.470	0.778	0.23	(0.05,1.06)
Adequate training	1.116	1.068	3.05	(0.38,24.77)
Habit				
Past clinic referral	0.120	0.717	1.13	(0.28,4.59)
Gives printed health material	1.126	0.708	3.08	(0.77,12.36)
Cues to action				
Previous travel illness	0.557	0.793	1.75	(0.34,8.25)
Previous program participation	-0.975	0.711	0.38	(0.09,1.52)

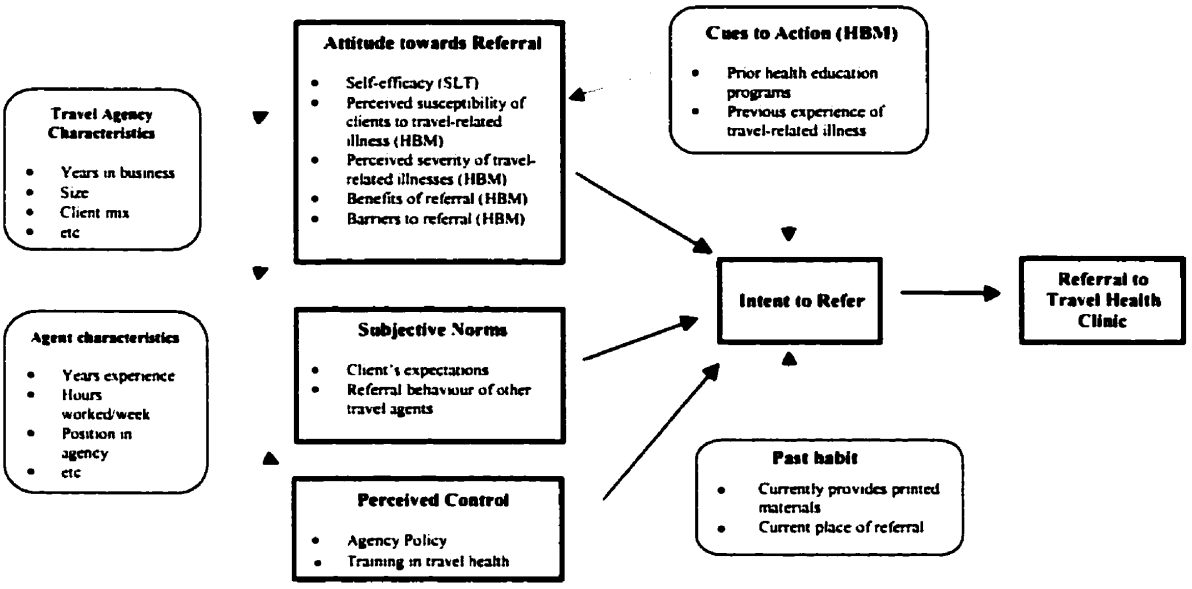
(a) SE=standard error
(b) OR=odds ratio for "increased referral"
(increase a lot/increase a little vs. refer the same *or* increase a lot vs. increase a little/stay the same)
(c) CI=confidence interval

Figure 1: International Tourist Arrivals from Europe and the Americas, 1990-1998*



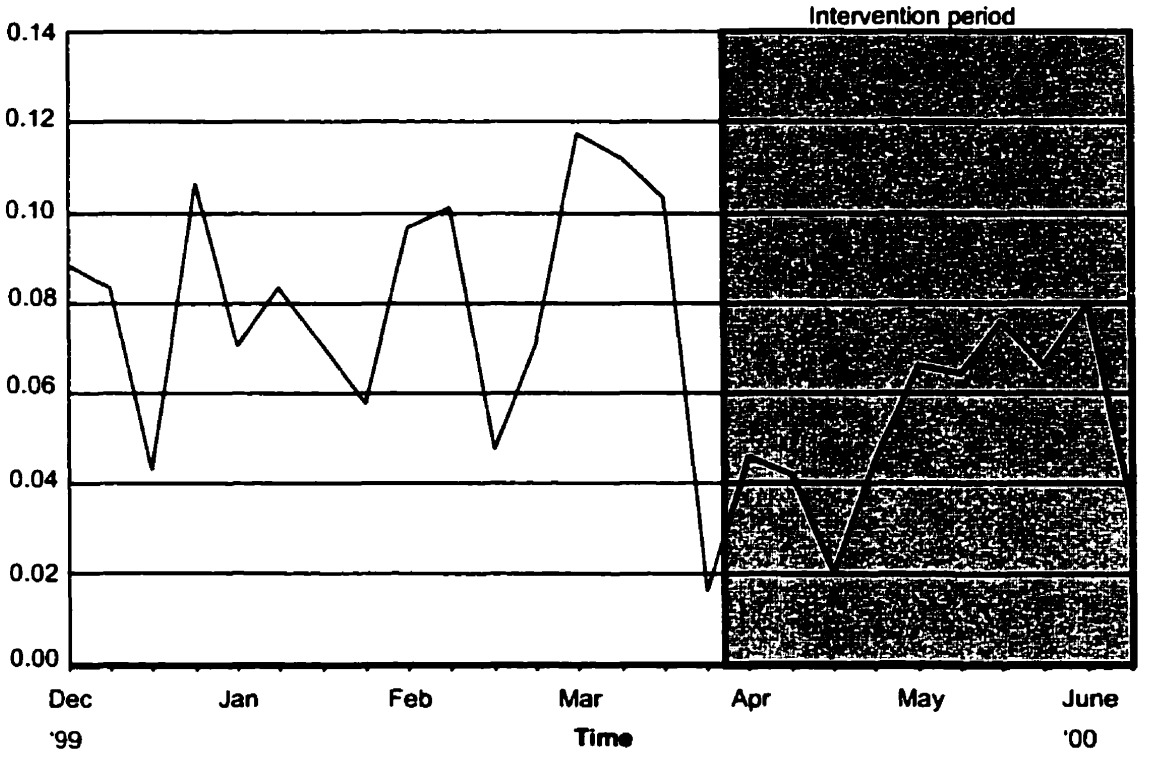
*Data source: World Tourism Organization (2000)

Figure 2: Model of referral behaviour*



*This model represents a modified version of the Theory of Planned Behavior[19], including constructs from the Health Belief Model[20] and Social Learning Theory[21]

Figure 3: Percent of first-time clients referred by travel agents – composite data from 7 travel health clinics, Montréal, Canada, December 1999 to June 2000.



6 DISCUSSION AND CONCLUSION

With increased exposure to tropical illness through growing trends in international travel, new methods are required to ensure travellers are prepared for the health risks they may encounter abroad. In order to secure the goal of traveller preparedness, it is becoming increasingly necessary for travel health specialists to form new partnerships with general practitioners, pharmacists, travel agents, airlines, etc. in order to reach travellers who are unaware that health precautions may be necessary for their trip. In the area of travel health, the idea of building partnerships with stakeholders outside the medical community is novel. It is here that the role of epidemiology becomes important, to document the feasibility and effectiveness of such partnerships, and to ultimately provide support for the adoption of a multi-disciplinary approach to travellers' health. From the evidence provided by epidemiologic research, policy decisions can be reached that best protect the Canadian traveller from travel-related illness.

While many opportunities for partnership exist, travel agents are still recognized as those with the most consistent pre-departure contact with travellers. Therefore, they are in an ideal position to partner with travel health specialists in the referral of at-risk travellers to travel health clinics. In addition, because travellers receiving a referral from their travel agent are much more likely to use travel clinic services than those who do not, it is important to encourage travel agents to refer on a routine basis.

Through a health promotion intervention, travel agents in this study were encouraged to refer at-risk travellers to a travel health clinic. Evaluation of the intervention revealed a small, but significant improvement in travel agents' overall attitudes and beliefs regarding referral, in particular with regard to their intention to refer travellers to pre-travel health clinics. In addition, 65% of travel agents self-reported an increase in referral behaviour following the intervention. These results demonstrate that partnerships with travel agents are indeed feasible and may ultimately lead to increased traveller awareness and decreased travel-related morbidity.

Despite low power, some understanding was also gained of the effect of characteristics of the travel agent or their agency on the effectiveness of the intervention. Through our understanding of these characteristics, future research will be better able to target health promotion interventions to those who will most benefit. Travel agents with some past experience with clinic referral were significantly more likely to improve their attitude regarding referral and to consider barriers to referral less important following the health promotion intervention. This would suggest that the intervention served more as a reminder to travel agents who had previously provided clinic referrals rather than acting to initiate referral behaviour in those unaccustomed to providing them. Despite this, when asked where they generally referred travellers for health advice, significantly more travel agents reported referring to a travel clinic following the intervention, indicating a true shift in the place of choice for referral of travellers. However, those with little or no referral experience with travel clinics may need to be convinced of the extent of travel morbidity and the value of the services offered by travel health clinics. There is also some concern among travel agents over the for-profit nature of travel health clinics and the cost of a clinic visit. In light of mounting evidence that travel health clinics offer more effective pre-departure travel health advice than general practitioners, these concerns must be addressed if referral patterns of travel agents are to change. Educational interventions might target this group through seminars at travel conventions and early in travel agent training and certification programs. Partnership with the travel insurance industry might help to make travel health referrals a more routine practice. Since travel agents already consistently recommend health insurance, it might be possible to piggyback referrals onto the provision of travel health insurance.

Since the intervention proved more effective in increasing older travel agents' intent to refer, it is important to understand whether this is a reflection of greater baseline sensitization to travel health issues in younger agents. If so, exploration of different health promotion interventions designed to have a greater effect on younger agents should be persued. Those who worked the longest hours also benefited most from the intervention. Given their busy schedules, it is likely that the busiest agents required an extra reminder to include travel health referrals as part of their work routine. The striking

increase in the self-reported referral behaviour of owners and managers compared with their employees reveals an important difference in the effectiveness of the intervention. Future efforts should target these individuals as they have the authority to make policy decisions concerning the agency and, as such, are likely to influence the referral behaviour of their employees.

The intervention was shown to have a positive influence on travel agents' attitudes and beliefs about referral, as well as on self-reported change in referral to travel health clinics. However, referral rates collected at local travel health clinics did not mirror this self-reported increase. While this may reflect social desirability bias on the part of travel agents, it may also be that a true increase in referral rates was not detectable by the study. Ther may be several possible explanations for this discrepancy. First, since the intervention was only distributed to 78 agents, it is probable that the potency of the intervention was not enough to effect a change in the referral rates seen in clinics. As well, pre-intervention rates, collected from December 1999 to March 2000 may have been artificially elevated. Travel agents were much more sensitized to referrals at this time due to an outbreak of malaria in the Dominican Republic, a popular holiday destination for Québec travellers. Second, travellers may have been referred to clinics by more than one source and they may not recall the recommendation from their travel agent by the time that they visit a clinic. Finally, since referral rates were only collected for approximately 2 months post-intervention, a true increase may have been masked due to a lag time between the traveller's receipt of referral and his/her clinic visit.

The use of proportions should adequately account for seasonal fluctuations in the number of travellers visiting travel health clinics, resulting in an unbiased estimate of the change in referral rates. However, the timing of the intervention undoubtedly mediated its effect on the *travel agent* population. Had the intervention period covered the Christmas season and winter travel period, travel agents would have had more of an opportunity to form routine referral habits since more clients would be travelling to tropical and sub-tropical destinations.

6.1 Future research

Given the positive effect of the intervention on travel agents' attitudes and beliefs, as well as the fact that two-thirds of respondents self-reported an increase in actual referral behaviour, there seems to be evidence for a re-examination of the intervention's effect on the traveller population, as measured by actual clinic visits. A successful follow-up study would need to be larger in scale, delivered during high season for travel to the tropics and sub-tropics, and have a much longer duration of follow-up. With an increased sample size, an examination of interaction effects between study variables could also be considered.

Owing to the exploratory nature of the present study, neither the questionnaires used, nor the score construction were formally validated. Input from travel agents and experts in travel medicine during questionnaire construction attempted to ensure content validity. By using factor analysis, an effort was made to ensure that the measurements used corresponded to theoretical constructs concerning referral behaviour (construct validity). No true external measure of change in travel agent's referral behaviour was available, and referral rates were used as an indicator only. Therefore, in the absence of a gold standard for comparison, criterion validity of the travel agent's responses could not be assessed. Test-retest reliability of the study instruments was not performed and its effect on the precision of results is unknown. Questionnaire validation with respect to language should also be formally examined. It is suggested that efforts to validate the instruments used in this study be made prior to further use.

In performing the literature review for this study, deficiencies in certain areas were noted which provide opportunities for future research in the area of travel health. First, it would be useful to have an account of the extent of travel-related morbidity and death in the Canadian travelling population, as well as the severity of morbidity experienced. Further studies on the cost-benefit of travel immunizations and malaria chemoprophylaxis are also warranted. In order for future policy decisions to be well informed, this information would need to be known in addition to the monetary costs to the Canadian health care system associated with treatment of travel-acquired illnesses.

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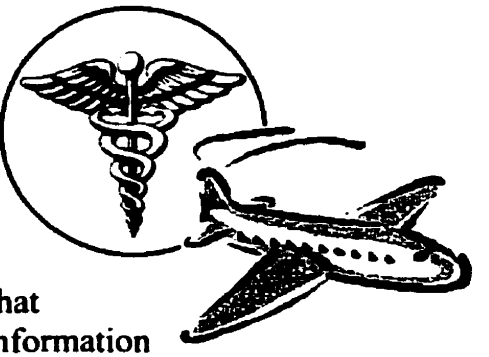
8 APPENDICES

Appendix 1: First Mailing - letter of introduction, consent form and pre-intervention questionnaire

Note: all study materials included in the pre-intervention mailing are double-sided, English and French recto-verso

Help Make Travel Safer!



McGill University invites you to become partners in promoting healthier travel. Of the many potential partnerships in health and travel, we feel that travel agents are uniquely positioned to give health information to travelers before departure. Illnesses and infections are a growing problem for all travelers to tropical and sub-tropical areas, but **together** we can ensure that Quebec travelers are prepared before they go. We would like to have your help in evaluating the usefullness of this type of partnership.

We know that travel agents are busy people, therefore our role will be to:

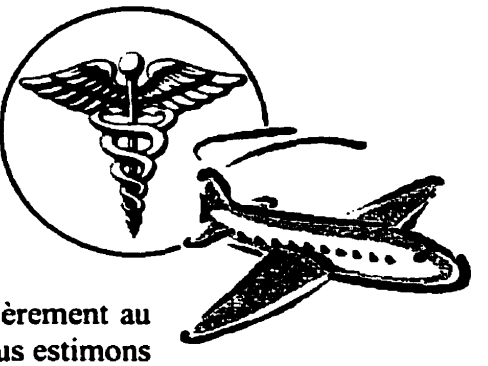
- Give you free travel health information brochures to pass on to your clients traveling to tropical and sub-tropical destinations
- Provide a travel health web site designed by travel agents for travel agents: search on-line for answers to your travel health questions!
- Supply the names, addresses and phone numbers of nearby travel health clinics that specialize in pre-travel health advice
- Provide a report of our findings

Your role would be to:

- Represent your travel agency in this study. You must have at least 1 year experience as a travel agent and serve travelers to tropical or sub-tropical destinations (any destination except Canada, the United States, Eastern and Western Europe, the Caribbean, Australia and New Zealand). In participating you will:
  - Complete a short written questionnaire now (15-20 min)
  - Distribute free travel health brochures to clients over 2-3 months
  - Complete a short follow-up questionnaire 3 months from now (15-20 min)

Enclosed, you'll find a copy of the first questionnaire. By filling it out and returning it, you will consent to participation in the study. Please return the questionnaire directly to the investigator; nobody else at the agency need know whether or not you have participated. We will then send you a study package containing travel health brochures, the web-site address and contact information for travel health clinics. Your participation in this study is completely voluntary and all information you provide will be kept strictly confidential. Answers will not in any way compromise job security, as no written report will divulge the names of individuals or travel agencies. If you have any questions about the study, please contact Dr. Theresa Gyorkos at (514) 937-6011 Ext. 4721. We thank you for your participation and look forward to a successful, long-term partnership!

FRANÇAIS AU VERSO



...pour améliorer la santé de vos voyageurs

L'université McGill vous invite à devenir partenaire dans la promotion "voyage en santé". Nous croyons sincèrement au potentiel d'un partenariat entre la santé et les voyages. Nous estimons que les agents de voyage sont les mieux placés pour donner de l'information sur la santé aux voyageurs avant leur départ. Les maladies et les infections sont des problèmes grandissant pour tous les gens qui voyagent dans les régions tropicales et subtropicales. Mais **ensemble** nous pouvons faire en sorte que les Québécois soient bien préparés avant leur départ. Nous aimerions avoir votre aide afin d'évaluer l'utilité de ce partenariat.

Les agents de voyage sont très occupés c'est pourquoi notre rôle sera de:

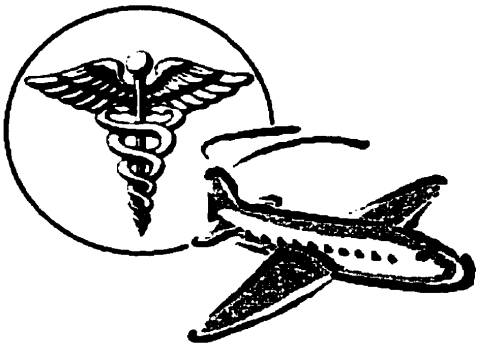
- Vous donner gratuitement des brochures d'informations santé que vous pouvez à votre tour distribuer à vos clients qui voyagent aux destinations tropicales et subtropicales.
- Vous fournir un site web santé-voyage contenant toute les réponses à vos questions concernant les voyages en santé.
- Vous fournir les noms, les adresses, et les numéros de téléphone des cliniques santé-voyage à Montréal
- Vous communiquer un rapport concernant le résultat de notre étude.

Votre rôle sera de:

- Représenter votre agence de voyage dans la présente étude. Vous avez besoin d'avoir au moins un an d'expérience en tant qu'agent de voyage et d'offrir à vos clients des destinations tropicales et subtropicales (n'importe quelle destination sauf le Canada, les USA, l'Est et l'Ouest de l'Europe, les Caraïbes, l'Australie et la Nouvelle-Zélande). En participant vous devrez:
  - Compléter un court questionnaire immédiatement (15-20 min)
  - Distribuer gratuitement les brochures d'informations santé à vos clients pour une période de 2 à 3 mois.
  - Compléter un court questionnaire de suivi dans environ 3 mois (15-20 min)

Vous trouverez ci-inclus une copie du premier questionnaire. Veuillez le remplir et nous le retourner; il servira de consentement pour la participation de l'étude. Nous vous demandons de retourner le questionnaire directement au chercheur, et nous vous ferons parvenir un envoi contenant les brochures santé-voyage, l'adresse du site web et les informations concernant les cliniques santé-voyage. Votre participation à cette étude est complètement volontaire et toute les informations que vous allez nous fournir seront traitées d'une manière strictement confidentielle. Soyez sans crainte les réponses que nous recevrons ne pourront en aucun cas compromettre votre emploi, et aucun nom d'individu ou d'agence de voyage ne sera divulgue dans le rapport écrit. Si vous avez des questions concernant cette étude n'hésitez pas à contacter Dr. Theresa Gyorkos au numéro (514) 937-6011 poste 4721. Nous vous remercions infiniment pour votre participation à cette étude et nous espérons une longue et fructueuse association !

ENGLISH ON OTHER SIDE



ID #: _____

Baseline Questionnaire

This questionnaire is to be completed by the person chosen to represent your travel agency in this study. Please fill in answers or check the appropriate box. It should take about 15 minutes to fill out. Thank you for your participation!

Name: _____

Travel Agency: _____

Telephone number: (514) _____ - _____

Today's Date: _____/_____/_____
DD / MM / YY

Section A: Your Travel Agency

1) How many years has your travel agency been in business? _____

2) How many travel agents work in your travel agency?
   a) Number of full-time agents: ☐☐☐
   b) Number of part-time agents: ☐☐☐

3) Is your agency:
   ☐ Independently owned
   ☐ Franchised
   ☐ Part of a chain
   ☐ Other (please specify): _____

4) Please indicate approximately what percentage of your bookings are for:

Type	Percentage
Business Travel	____%
Tourist Travel	____%
Charter Travel	____%
Student Travel	____%
Other Travel	____%
	100%

ID #: _____

5) Approximately what percentage of your travelers purchase tickets to the following countries:

Country	Percentage
Africa	____%
Asia, South Asia, and South-East Asia	____%
India	____%
Mexico	____%
Central and South America	____%
Others (Canada, US, Europe, Caribbean, Australia, New Zealand, Middle East)	____%
TOTAL	**100%**

6) Does your agency have a policy on providing health advice to travelers?

☐ I don't know

☐ No

☐ Yes → Is this policy:

☐ Verbal

☐ Written

Please describe this policy (or attach the policy document):

_____

_____

_____

Section B: Travel Agent

7) How many years have you worked as a travel agent? ☐☐

8) How many hours a week do you work? ☐☐

9) Are you:

☐ the owner/manager of the travel agency

☐ a salaried travel agent

☐ other (specify): _____

10) How many clients purchase tickets in an average day? ☐☐☐

ID #: _____

11) Do you have access to the Internet through your agency?

- ☐ No → GO TO QUESTION 13
- ☐ Yes

12) How often do you use the Internet at work?

- ☐ Many times a day
- ☐ Once or twice a day
- ☐ Once or twice a week
- ☐ Once or twice a month
- ☐ Less than once or twice a month

For questions 13 – 21, please indicate the strength with which you agree or disagree with the following statements. If you wish, please include written comments.

13) I am concerned about the health of my clients travelling to tropical and sub-tropical locations:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

14) I can promote healthier travel among my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

15) It is part of my job to promote healthy travel in my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

16) The travel agency should be a place that promotes the health of travelers:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

ID #: _____

17) I feel comfortable talking to my clients about health issues relating to travel:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

18) My clients expect me to deliver general health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

19) I believe that travel-related illnesses can have serious health consequences for my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

20) I believe that clients who stay healthy on their trip are more likely to travel again:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

21) By promoting healthy travel, I will add value to my service as a travel agent:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

22) Have you ever had a travel-related illness yourself or known someone who did?

☐ Yes

☐ No

ID #: _____

23) How many other travel agents that you know discuss healthy travel with their clients?

- ☐ All of them
- ☐ Most of them
- ☐ Some of them
- ☐ None of them

Section C: Travel Health Information

24) How often do ***you*** provide health advice to your clients traveling to: (check one box per row)

	Never	Only when asked	Sometimes	Often	Always
Africa	☐	☐	☐	☐	☐
Asia	☐	☐	☐	☐	☐
South Asia	☐	☐	☐	☐	☐
India	☐	☐	☐	☐	☐
South-East Asia	☐	☐	☐	☐	☐
Mexico	☐	☐	☐	☐	☐
Central America	☐	☐	☐	☐	☐
South America	☐	☐	☐	☐	☐
Cruise ports of call	☐	☐	☐	☐	☐
Others (Canada, US, Europe, Caribbean, etc)	☐	☐	☐	☐	☐

25) How often do you provide *printed* health information materials to your clients travelling to tropical and subtropical destinations?

- ☐ Never
- ☐ Sometimes
- ☐ Often
- ☐ Always

ID #: _____

26) Please check [✓] the type of ***general*** health information you currently discuss with your clients to the following destinations (you may check more than one answer per row)

	No health information is discussed	Anti-malarial medication	Mosquito protection	Vaccines	Safe eating and drinking practices	Sun protection
Africa						
Asia						
South Asia						
India						
South-East Asia						
Mexico						
Central America						
South America						
Others (Canada, US, Europe, etc)						

	Safe Sex	First Aid Kits	Accidents	Health Insurance	Other
Africa					
Asia					
South Asia					
India					
South-East Asia					
Mexico					
Central America					
South America					
Others (Canada, US, Europe, etc)					

ID #: _____

27) How often do you consult the following sources of travel health information? Please check ☑ either never, sometimes or often for each source (one ☑ per row):

Sources of travel health information	Never	Sometimes	Often
Written travel health brochures (specify): _____ _____ _____			
Travel industry computer software			
Travel health clinics			
Travel Information Manual (TIM manual)			
Tour operators			
Public Health department			
Embassies/consulates			
CLSC			
Internet Web sites (specify top 2 sites consulted): _____ _____ _____			
Physician			
Family/Friends			
Past clients			
Books/Magazines (specify): _____ _____ _____			
Radio/TV programs or commercials (specify): _____ _____ _____			
Other Travel Agents			
Other (specify): _____ _____ _____ _____			

ID #: _____

Section D: Referral

28) Where do you generally refer your clients for health information?

- ☐ I never refer my clients for health information
- ☐ To their general practitioner (family doctor)
- ☐ To a physician I know who is interested in travel health
- ☐ To a travel medicine clinic
- ☐ Other (specify): _____

29) Based on your personal experience, how often would you suggest that the following types of clients consult a *travel health clinic* before departure? Please check ☑ one box per row.

	Never	Sometimes	Often	Always
Pregnant woman	☐	☐	☐	☐
Adult travelling with child	☐	☐	☐	☐
Client who had a heart attack 6 months ago	☐	☐	☐	☐
Traveler with diabetes	☐	☐	☐	☐
Backpacker travelling through Europe	☐	☐	☐	☐
Business traveller going to India for 1 week	☐	☐	☐	☐
Backpacker travelling through Asia	☐	☐	☐	☐
Couple going to Asia on honeymoon	☐	☐	☐	☐
Business traveller to Indonesia for 3-6 months	☐	☐	☐	☐

30) I believe that referring clients to travel health clinics will reduce their risk of travel-related disease:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

ID #: _____

31) I intend to refer my clients travelling to tropical and sub-tropical destinations to a travel health clinic:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

***Based on your own experience**, please indicate the strength with which you agree or disagree with the following statements:*

32) I am too busy to refer clients for pre-travel health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

33) I don't know where to refer clients for pre-travel health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

34) I can't tell who needs to be referred and who doesn't:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

35) I am worried that if I suggest that there are health risks associated with their trip my clients will not buy a ticket:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Please mention any other reasons why you might feel uncomfortable or unable to refer clients for pre-travel health advice.

_____

_____

_____

36) Please circle any of the following health promotion activities for travel agents in which you have been involved:

a) Travel health seminars through travel clinics, ACTA, CLSCs, or Public Health departments

Please specify: _____

b) Other research studies through universities or hospitals

Please specify: _____

c) Corporate seminars (i.e. on travel insurance, health products)

Please specify: _____

d) Other (specify): _____

ID #: _____

37) Do you feel that travel agents receive enough training about travel health?

☐ Yes

☐ No

Comments: _____

_____

Questions 38 and 39 are optional, but would be useful for the interpretation of study results:

38) What is your age?

a) Less than 20
b) 20-29
c) 30-39
d) 40-49
e) 50-59
f) 60-69
g) Greater than 69

39) Your sex is: ☐ Male ☐ Female

The questionnaire is now complete. Please mail it in the self-addressed, stamped envelope provided. In 2-3 weeks you will be sent a study package including travel health brochures, the web site address for travel agents and the names, addresses and phone #s of local travel medicine clinics. A follow-up questionnaire will be sent in about 3 months time. Thank you for your participation!

ID #: _____

Questionnaire initial

Ce questionnaire doit être rempli par la personne choisie pour représenter votre agence de voyage dans le cadre de cette étude. Veuillez répondre à toutes les questions en écrivant les réponses ou en cochant la case appropriée. Ça devrait prendre environ 15 minutes. Merci de participer!

Nom: _____

Agence de voyage: _____

Numéro de téléphone: (514) _____ - _____

Date: _____/_____/_____
JJ / MM / AA

Section A: Votre agence de voyage

1) Depuis combien d'années votre agence de voyage opère-t-elle? _____

2) Combien d'agents de voyage y travaillent-ils?
   a) Nombre d'agents à temps complet: ☐☐☐
   b) Nombre d'agents à temps partiel: ☐☐☐

3) Votre agence:
   - ☐ Est indépendante
   - ☐ Est franchisée
   - ☐ Fait partie d'une chaîne
   - ☐ Autre (s.v.p. précisez): _____

4) Veuillez indiquer le pourcentage approximatif de vos réservations selon la catégorie:

Catégorie	Pourcentage
Voyages d'affaires	____%
Tourisme	____%
Vols nolisés (groupes)	____%
Voyages étudiants	____%
Autre	____%
	100%

ID #: _____

5) Environ quel pourcentage de vos voyageurs achètent des billets pour les pays suivants :

Pays	Pourcentage
Afrique	____%
Asie, Asie du sud et Asie du Sud-Est	____%
Inde	____%
Mexique	____%
Amérique centrale et du Sud	____%
Autres (Canada, E.U., Europe, Caraïbes, Australie, Nouvelle-Zélande, Moyen Orient)	____%
TOTAL	**100%**

6) Votre agence a-t-elle une politique visant à fournir aux voyageurs des conseils en matière de santé?

☐ Je ne sais pas

☐ Non

☐ Oui → Cette politique est-elle:

☐ Verbale

☐ Écrite

Veuillez décrire la politique (ou joindre une copie du document):

_____

_____

_____

Section B: Agent de voyage

7) Combien d'années avez-vous travaillé comme agent de voyage? ☐☐

8) Combien d'heures par semaine travaillez-vous? ☐☐

9) Êtes-vous:

☐ Propriétaire ou gérant (e) de l'agence de voyage

☐ Agent de voyage salarié

☐ Autre (précisez): _____

10) Dans une journée, en moyenne, combien de clients achètent des billets? ☐☐☐

ID #: _____

11) À votre agence, avez-vous accès à Internet?

- ☐ Non Allez à la question 13
- ☐ Oui

12) À quelle fréquence utilisez-vous Internet au travail?

- ☐ Plusieurs fois par jour
- ☐ Une fois ou deux par jour
- ☐ Une fois ou deux par semaine
- ☐ Une fois ou deux par mois
- ☐ Moins d'une fois ou deux par mois

Pour les questions 13 à 21, veuillez indiquer dans quelle mesure vous êtes en accord ou en désaccord avec les énoncés suivants. Vous pouvez ajouter des commentaires écrits.

13) Je suis préoccupé (e) par la santé de mes clients qui voyagent dans des régions tropicales et subtropicales:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

14) Je peux promouvoir auprès de mes clients une façon plus saine de voyager:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

15) Ça fait parti de mon travail de promouvoir auprès de mes clients une façon plus saine de voyager:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

ID #: _____

16) Une agence de voyages devrait être un endroit où l'on fait la promotion de la santé des voyageurs:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

17) Je suis à l'aise pour discuter avec mes clients des questions de santé touchant les voyageurs:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

18) Mes clients s'attendent à ce que je leur donne des conseils généraux en matière de santé lors des voyages:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

19) Je crois que les maladies reliées aux voyages peuvent entraîner des conséquences sérieuses pour la santé de mes clients :

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

20) Je crois que les clients qui ne sont pas malades pendant leur voyage sont plus susceptibles de voyager de nouveau:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

ID #: _____

21) En promouvant la santé lors des voyages, j'augmente la valeur de mes services à titre d'agent de voyage:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

22) Vous même ou quelqu'un que vous connaissez a-t-il déjà souffert d'une maladie reliée à un voyage?

☐ Oui
☐ Non

23) Parmi les agents de voyage que vous connaissez, combien discutent avec leurs clients de santé lors du voyage?

☐ Tous
☐ La plupart
☐ Quelques-uns
☐ Aucun

Section C: Information sur la santé lors des voyages

24) À quelle fréquence fournissez-vous de l'information sur la santé à vos clients qui voyagent en: (cochez une case par rangée)

	Jamais	Seulement si demandé	Quelquefois	Souvent	Toujours
Afrique	☐	☐	☐	☐	☐
Asie	☐	☐	☐	☐	☐
Asie du Sud	☐	☐	☐	☐	☐
Asie du Sud-Est	☐	☐	☐	☐	☐
Inde	☐	☐	☐	☐	☐
Mexique	☐	☐	☐	☐	☐
Amérique centrale	☐	☐	☐	☐	☐
Amérique du Sud	☐	☐	☐	☐	☐
Ports d'escale de croisière	☐	☐	☐	☐	☐
Autre (Canada, É.U., Europe, Caraïbes, etc)	☐	☐	☐	☐	☐

ID #: _____

25) À quelle fréquence fournissez-vous aux clients voyageant dans des régions tropicales et subtropicales de l'information *écrite* sur la santé?

- ☐ Jamais
- ☐ Quelquefois
- ☐ Souvent
- ☐ Toujours

26) Veuillez cocher ☑ le type d'information générale sur la santé que vous discutez avec vos clients voyageant vers les destinations suivantes (vous pouvez cocher plus d'un item):

	Aucune information sur la santé n'est discutée	Médicaments antipaludéens	Protection contre les moustiques	Vaccins	Habitudes alimentaires sécuritaires (nourriture et breuvages)	Protection solaire
Afrique						
Asie						
Asie du Sud						
Asie du Sud-Est						
Inde						
Mexique						
Amérique centrale						
Amérique du Sud						
Autre (Canada, É.U., Europe, etc)						

	Rapports sexuels protégés	Trousse de premiers soins	Accidents	Assurance maladie	Autre
Afrique					
Asie					
Asie du Sud					
Asie du Sud-Est					
Inde					
Mexique					
Amérique centrale					
Amérique du Sud					
Autre (Canada, É.U., Europe, etc)					

ID #: _____

27) À quelle fréquence consultez-vous les sources suivantes d'information sur la santé des voyageurs? Cochez ☑ une seule réponse par rangée (jamais, quelquefois ou souvent):

Sources d'information sur la santé des voyageurs	Jamais	Quelquefois	Souvent
Dépliants sur la santé des voyageurs (précisez): _____ _____ _____			
Logiciel de l'industrie du voyage			
Clinique santé-voyage			
Manuel d'information du voyageur (Manuel TIM)			
Organisateurs de tours			
Département de santé publique			
Ambassades, consulats			
CLSC			
Sites Internet (indiquez les deux sites les plus consultés): _____ _____ _____			
Médecin			
Famille, Amis			
Anciens clients			
Livres, revues (précisez): _____ _____ _____			
Programmes de radio, de télé ou annonces publicitaires (précisez): _____ _____			
Autres agents de voyage			
Autre (précisez): _____ _____			

ID #: _____

Section D: Référence

28) Habituellement, où recommandez-vous vos clients pour de l'information sur la santé?

- ☐ Je ne recommande jamais mes clients pour de l'information sur la santé
- ☐ À leur médecin de famille
- ☐ À un médecin que je connais qui s'intéresse à la santé des voyageurs
- ☐ À une clinique santé-voyage
- ☐ Autre (précisez): _____

29) Selon votre expérience personnelle, combien de fois suggéreriez-vous que les voyageurs suivants consultent une clinique santé-voyage avant leur départ? Cochez ☑ une case par rangée.

	Jamais	Quelquefois	Souvent	Toujours
Femme enceinte	☐	☐	☐	☐
Adulte voyageant avec un enfant	☐	☐	☐	☐
Client qui a eu une crise cardiaque dans les derniers 6 mois	☐	☐	☐	☐
Voyageur diabétique	☐	☐	☐	☐
Routard voyageant en Europe	☐	☐	☐	☐
Personne voyageant en Inde une semaine pour affaires	☐	☐	☐	☐
Routard voyageant en Asie	☐	☐	☐	☐
Couple en lune de miel en Asie	☐	☐	☐	☐
Personne voyageant en Indonésie de 3 à 6 mois pour affaires	☐	☐	☐	☐

30) Je crois que recommander des clients à une clinique pour voyageurs contribue à réduire leur risque de souffrir de maladies reliées au voyage.

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

ID #: _____

31) J'ai l'intention de recommander mes clients qui voyageront vers des destinations tropicales et subtropicales à une clinique santé voyage:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

Selon votre expérience personnelle, veuillez indiquer dans quelle mesure vous êtes en accord ou en désaccord avec les énoncés suivants:

32) Je suis trop occupé (e) pour recommander mes clients pour des conseils sur la santé avant leur départ:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

33) Je ne sais pas où recommander mes clients avant leur départ pour des conseils sur la santé:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

34) Je ne sais pas si un client doit être recommandé ou non:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

35) J'ai peur que mes clients n'achètent pas de billets si je suggère que le voyage peut comporter des risques pour leur santé

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

S.V.P. Indiquez toute autre raison qui pourrait vous empêcher de recommander des clients pour des conseils sur la santé.

_____

_____

_____

ID #: _____

36) Veuillez encercler l'une ou plusieurs des activités suivantes de promotion de la santé destinées aux agents de voyage auxquelles vous avez participé:

a) Séminaires sur la santé des voyageurs donnés par des cliniques de voyage, l'ACTA, des CLSC ou des départements de santé publique

S.V.P. précisez: _____

b) Autres projets de recherche par le biais d'universités ou d'hôpitaux

S.V.P. précisez: _____

c) Séminaires d'entreprises (i.e. assurance voyage, produits de santé)

S.V.P. précisez: _____

d) Autre (précisez): _____

37) Pensez-vous que les agents de voyage reçoivent assez de formation en santé-voyage?

☐ Oui

☐ Non Commentaires: _____

Les questions 38 et 39 sont optionnelles. Cependant, elles seraient utiles pour l'interprétation des résultats de l'étude:

38) Quel est votre âge?
a) Moins de 20 ans
b) 20-29
c) 30-39
d) 40-49
e) 50-59
f) 60-69
g) Plus de 69

39) Sexe: ☐ Masculin ☐ Féminin

Merci d'avoir participé! S.v.p., envoyez nous le questionnaire dans l'enveloppe ci-jointe. Dans 2 ou 3 semaines vous recevrez une trousse d'étude comprenant des dépliants sur la santé des voyageurs, des adresses de sites Internet destinés aux agents de voyage ainsi que des noms, adresses et numéros de téléphone de cliniques santé voyage. Vous recevrez un questionnaire de suivi dans environ 3 mois.

Appendix 2: Post-intervention Mailing – offer of incentive, post-intervention questionnaire

Thank you for your participation in this study -

Your feedback is important!

As a token of our appreciation, a cheque for **$25** will be mailed to you when we receive your completed final questionnaire (enclosed).

Replies received within 7 days would be greatly appreciated!

Merci pour votre participation dans cette étude -

Vos commentaires sont importants !

En guise de remerciement pour votre participation, un chèque de **$25** vous sera envoyé lorsqu'on recevra le questionnaire final complété.

Un retour dans les 7 jours serait beaucoup apprécié !

ID #: _____

Final Questionnaire

This second and last questionnaire is to be filled out by the same travel agent who completed the baseline survey about 3 months ago. *Please fill in answers or check the appropriate box; it should take about 10-15 minutes to fill out. A summary of the results will be sent to you once the study is complete. Thank you again for your interest and participation!*

Name: _____

Travel Agency: _____

Today's Date: _____/_____/_____
DD / MM / YY

Section A: Health Information Delivery

About 2 months ago, a package was delivered to you or to your agency containing travel health brochures and access to a travel health web-site for travel agents.

1) How many travel health brochures were you able to distribute to your clients?

- ☐ All of them
- ☐ Most of them
- ☐ Some of them
- ☐ A few of them
- ☐ None of them

Reason: _____
_____
_____

2) Did you find the information in the brochure

- ☐ Not useful
- ☐ Somewhat useful
- ☐ Very useful
- ☐ Extremely useful
- ☐ Didn't read the brochure

Comments: _____
_____

ID #: _____

3) In your opinion, did *your clients* find the information in the brochure

☐ Not useful ☐ somewhat useful ☐ very useful ☐ extremely useful ☐ don't know

Comments: _____

_____

4) How did you distribute these brochures to your clients travelling to tropical/sub tropical destintions?

☐ a brochure was included inside clients' airline ticket

☐ brochures were put on display and clients were expected to help themselves

☐ other (please describe):

_____

_____

_____

5) Did you find that distributing this information to your clients was:

☐ Inconvenient ☐ convenient ☐ very convenient ☐ extremely convenient

Comments: _____

_____

6) How many times did you visit the travel health website provided in the study package?

☐ Never → GO TO QUESTION 9

☐ Once

☐ 2-5 times

☐ 6-10 times

☐ more than 10 times

7) Did you find the information on the website

☐ Not useful ☐ somewhat useful ☐ very useful ☐ extremely useful

Comments: _____

_____

ID #: _____

8) How often did you follow the links to the following websites:

	Often	Sometimes	Never
a) Health Hazard Advisories (Health Canada)	☐	☐	☐
b) Health Information by Geographic Area (CDC)	☐	☐	☐
c) Yellow Fever Vaccination (Health Canada)	☐	☐	☐
d) List of Island of Montréal travel health clinics	☐	☐	☐

Section B: Traveller Health

For questions 9-17, please indicate the strength with which you agree or disagree with the following statements. ***Do not be concerned if some of the questions seem familiar, please answer according to how you feel at this point in time.*** *Check one box only. If you wish, please include written comments.*

9) I am concerned about the health of my clients travelling to tropical and sub-tropical locations:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

10) I can promote healthier travel among my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

11) It is part of my job to promote healthy travel in my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

ID #: _____

12) The travel agency should be a place that promotes the health of travellers:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

13) I feel comfortable talking to my clients about health issues relating to travel:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

14) My clients expect me to deliver general health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

15) I believe that travel-related illnesses can have serious health consequences for my clients:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

16) I believe that clients who stay healthy on their trip are more likely to travel again:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

17) By promoting healthy travel, I will add value to my service as a travel agent:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

ID #: _____

Section C: Travel Health Referrals

18) Where do you currently refer your clients for health information?

- ☐ I never refer my clients for health information
- ☐ To their general practitioner (family doctor)
- ☐ To a physician I know is interested in travel health
- ☐ To a travel medicine clinic
- ☐ Other (specify): _____

19) I believe that referring clients to travel health clinics will reduce their risk of travel-related disease:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

20) I intend to refer my future clients travelling to tropical and sub-tropical destinations to a travel health clinic:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Comments: _____

_____

***Based on your own experience**, please indicate the strength with which you agree or disagree with the following statements:*

21) I am too busy to refer clients for pre-travel health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

22) I don't know where to refer clients for pre-travel health advice:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

23) I can't tell who needs to be referred and who doesn't:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

ID #: _____

24) I am worried that if I suggest that there are health risks associated with their trip my clients will not buy a ticket:

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

25) Do you feel that your knowledge of travel health issues has improved as a result of this study?

☐ Yes
☐ No
☐ Uncertain

26) Compared to before this study, how often do you now refer travellers going to tropical and sub-tropical destinations to a pre-travel health clinic?

☐ Much more often than before
☐ A little more often than before
☐ About the same as before
☐ A little less often than before
☐ Much less often than before

Section D: Satisfaction

27) Which method of health information delivery did you prefer?

☐ Brochures to give to my clients
☐ Web Site for my own use
☐ A combination of both
☐ Neither one

28) Are you interested in continuing to provide your clients with the travel health brochures used in the study?

☐ Uncertain
☐ No
☐ Yes
☐ Yes, with modifications (please explain): _____

_____

ID #: _____

29) Are you interested in continued use of the website used in the study?

- ☐ Uncertain
- ☐ No
- ☐ Yes
- ☐ Yes, with modifications (please explain): _____

_____

30) In this study, we have used brochures and websites as a means to communicate travel health information to travel agents. Please rank from 1 to 3 other health promotion activities that you think would improve communication between travel agents, travellers and the medical community: 1=most preferred, 3=least preferred.

- ☐ Workshops on travel health
- ☐ E-mail updates of travel health risks
- ☐ Newsletter on travel health

Other suggestions?

_____

_____

_____

Thank you! Your participation in the study is now complete. We appreciate the time and interest you have given to this study and hope that it can be the beginning of a mutually productive and interactive partnership that will improve health preparation among travellers.

A summary of the study results will be sent to you in about 6 months' time.

ID #: _____

Questionnaire final

Ce dernier questionnaire doit être rempli par le même agent de voyage qui a complété le questionnaire initial il y a environ 3 mois. *Veuillez répondre à toutes les questions en écrivant les réponses ou en cochant la case appropriée. Ça devrait prendre environ 10 à 15 minutes. Un résumé des résultats vous sera envoyé une fois que l'étude sera terminée. Nous apprécions votre participation!*

Nom: _____

Agence de voyage: _____

Date: _____/_____/_____
JJ / MM / AA

Section A: Distribution de l'information sur la santé

Il y a environ 2 mois, vous avez reçu une trousse d'étude comprenant des dépliants sur la santé-voyage et l'adresse d'un site web destiné aux agents de voyage.

1) Combien de brochures santé-voyage avez vous pu distribuer à vos clients?

- ☐ Toutes
- ☐ La plupart
- ☐ Quelques-unes
- ☐ Peu
- ☐ Aucune

Raison: _____
_____
_____

2) L'information des dépliants était:

- ☐ Inutile
- ☐ Un peu utile
- ☐ Très utile
- ☐ Extrêmement utile
- ☐ Je ne l'ai pas lue

Commentaires: _____
_____

ID #: _____

3) Selon vous, *vos clients* ont trouvé l'information des dépliants:

☐ Inutile ☐ Un peu utile ☐ Très utile ☐ Extrêmement utile ☐ Je ne sais pas

Commentaires: _____

_____

4) Comment avez-vous distribué les brochures à vos clients?

☐ une brochure a été incluse à l'intérieur de leur billet d'avion

☐ des brochures ont été exposées à la disposition des clients

☐ autre (veuillez préciser):

_____

_____

_____

5) Avez-vous trouvé que distribuer cette information à vos clients était:

☐ Pas pratique ☐ Un peu pratique ☐ Pratique ☐ Facile à faire

Commentaires: _____

_____

6) Combien de fois avez-vous consulté le site internet sur la santé en voyage fourni dans la trousse de l'étude?

☐ Jamais → Allez à la question 9

☐ Une fois

☐ 2 à 5 fois

☐ 6 à 10 fois

☐ Plus de 10 fois

7) L'information sur le site Internet était:

☐ Inutile ☐ Un peu utile ☐ Très utile ☐ Extrêmement utile

Commentaires: _____

_____

ID #: _____

8) Combien de fois avez-vous consulté les liens suivants sur le site Internet:

	Souvent	Parfois	Aucun
a) Avis relatifs à la prévention des dangers pour la santé (Santé Canada)	☐	☐	☐
b) Information sur la santé selon la région (CDC)	☐	☐	☐
c) Exigences en matière de vaccination contre la fièvre jaune (Santé Canada)	☐	☐	☐
d) Liste des cliniques de santé-voyage de l'île de Montréal	☐	☐	☐

Section B: Santé du voyageur

Pour les questions 9 à 17, veuillez indiquer dans quelle mesure vous êtes en accord ou en désaccord avec les énoncés suivants. ***Ne soyez pas surpris (e) si certaines questions vous semblent familières. Répondez à chacune d'elles en fonction de ce que vous pensez présentement.*** *Cochez une case seulement. Vous pouvez ajouter des commentaires écrits.*

9) Je suis préoccupé (e) par la santé de mes clients qui voyagent dans des régions tropicales et subtropicales:

Tout à fait en désaccord ☐ Plutôt en désaccord ☐ Neutre ☐ Plutôt en accord ☐ Tout à fait d'accord ☐

Commentaires: _____

_____

10) Je peux promouvoir auprès de mes clients une façon plus saine de voyager:

Tout à fait en désaccord ☐ Plutôt en désaccord ☐ Neutre ☐ Plutôt en accord ☐ Tout à fait d'accord ☐

Commentaires: _____

_____

11) Ça fait parti de mon travail de promouvoir auprès de mes clients une façon plus saine de voyager:

Tout à fait en désaccord ☐ Plutôt en désaccord ☐ Neutre ☐ Plutôt en accord ☐ Tout à fait d'accord ☐

Commentaires: _____

_____

ID #: _____

12) Une agence de voyages devrait être un endroit où l'on fait la promotion de la santé des voyageurs:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

13) Je suis à l'aise pour discuter avec mes clients des questions de santé touchant les voyageurs:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

14) Mes clients s'attendent à ce que je leur donne des conseils généraux en matière de santé lors des voyages:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

15) Je crois que les maladies reliées aux voyages peuvent entraîner des conséquences sérieuses pour la santé de mes clients :

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

16) Je crois que les clients qui ne sont pas malades pendant leur voyage sont plus susceptibles de voyager de nouveau:

Tout à fait en désacord	Plutôt en désacord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires:_____

_____

ID #: _____

17) En promouvant la santé lors des voyages, j'augmente la valeur de mes services à titre d'agent de voyage:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

Section C: Référence

18) À présent, où recommandez-vous vos clients pour de l'information sur la santé?

- ☐ Je ne recommande jamais mes clients pour de l'information sur la santé
- ☐ À leur médecin de famille
- ☐ À un médecin que je connais qui s'intéresse à la santé des voyageurs
- ☐ À une clinique santé-voyage
- ☐ Autre (précisez): _____

19) Je crois que recommander des clients à une clinique pour voyageurs contribue à réduire leur risque de souffrir de maladies reliées au voyage.

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

20) J'ai l'intention de recommander mes clients qui voyageront vers des destinations tropicales et subtropicales à une clinique santé-voyage:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

Commentaires: _____

_____

***Selon votre expérience personnelle**, veuillez indiquer dans quelle mesure vous êtes en accord ou en désaccord avec les énoncés suivants*:

21) Je suis trop occupé (e) pour recommander mes clients pour des conseils sur la santé avant leur départ:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

ID #: _____

22) Je ne sais pas où recommander mes clients avant leur départ pour des conseils sur la santé:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

23) Je ne sais pas si un client doit être recommandé ou non:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

24) J'ai peur que mes clients n'achètent pas de billets si je suggére que le voyage peut comporter des risques pour leur santé:

Tout à fait en désaccord	Plutôt en désaccord	Neutre	Plutôt en accord	Tout à fait d'accord
☐	☐	☐	☐	☐

25) Croyez-vous que vos connaissances en matière de santé lors des voyages se sont améliorées suite à cette étude?

- ☐ Oui
- ☐ Non
- ☐ Incertain(e)

26) Suite à cette étude, à quelle fréquence recommandez-vous, à des cliniques santé-voyage, des clients à destinations tropicales ou subtropicales?

- ☐ Beaucoup plus fréquemment qu'avant
- ☐ Un peu plus fréquemment qu'avant
- ☐ La même qu'avant
- ☐ Un peu moins fréquemment qu'avant
- ☐ Beaucoup moins fréquemment qu'avant

Section D: Satisfaction

27) Quelle méthode de distribution de l'information avez-vous préférée?

- ☐ Dépliants à remettre à vos clients
- ☐ Site Internet que vous pouvez consulter
- ☐ Une combinaison des deux
- ☐ Aucun

ID #: _____

28) Êtes-vous intéressé (e) à continuer de fournir à vos clients les dépliants sur la santé en voyage utilisés pour cette étude?

- ☐ Incertain
- ☐ Non
- ☐ Oui
- ☐ Oui, avec des changements (Veuillez expliquer): _____

_____

29) Êtes-vous intéressé (e) à continuer d'utiliser le site Internet consulté pour cette étude?

- ☐ Incertain
- ☐ Non
- ☐ Oui
- ☐ Oui, avec des changements (veuillez expliquer): _____

_____

30) Dans le cadre de cette étude, nous avons utilisé des dépliants et des sites Internet comme moyens de communiquer aux agents de voyage de l'information sur la santé des voyageurs. Veuillez classer de 1 à 3 d'autres promotions de la santé don't vous pensez qu'elles pourraient améliorer la communication entre les agents de voyage, les voyageurs et la communauté médicale: 1=la meilleure, 3=la moins bonne

- ☐ Des ateliers santé-voyage
- ☐ Des mises à jour par courrier éléctronique des risques santé-voyage
- ☐ Un bulletin santé-voyage distribué aux agences de voyage

Autres suggestions?

_____

_____

_____

Merci ! Votre participation à cette étude est maintenant terminée. Nous apprecions le temps et l'interêt que vous y avez donné. Nous esperons qu'elle soit le début d'un partenariat interactif et mutuellement productif, qui ameliorera la santé-voyage.

Nous vous communiquerons un résumé des résultats de l'étude dans environ 6 mois.

Appendix 3: Intervention Package – covering letter, brochure, web-site

Thank you

for completing the baseline questionnaire!

Your travel health promotion package contains:

1. **Brochures** for you to distribute to all clients travelling to tropical and sub-tropical destinations (i.e. all destinations except Canada, USA, Europe, Russia, Australia, and New Zealand). **Please make sure to give one with each ticket purchased to these destinations.**

2. **A web site address** where you can access more detailed information on travel health through links to Health Canada and the US Centers for Disease Control. Please stick this address to your computer (or bookmark it in your browser) and refer to it whenever you have questions about travel health!

Français au verso

Merci

d'avoir complété le questionnaire initial!

Votre trousse promouvant la santé-voyage contient:

1. **Des brochures** que vous pouvez à votre tour distribuer à vos clients qui voyagent aux destinations tropicales ou subtropicales (n'importe quelle destination sauf le Canada, les USA, l'Europe, la Russie, l'Australie, et la Nouvelle-Zélande). **S'il vous plaît, donnez une brochure avec chaque billet de ce type qui est acheté.**

2. **Un site web** où vous pouvez trouver l'information plus détaillée en santé-voyage à travers des liens à Santé Canada et les Centres de contrôle et prévention des maladies aux Etats-Unis (CDC). Veuillez coller cette adresse à votre ordinateur (ou l'ajouter à votre liste de signets) et consultez-la lorsque vous avez des questions en santé-voyage !

Over for English

Going to the Tropics or subtropics?

Have a Healthy trip!

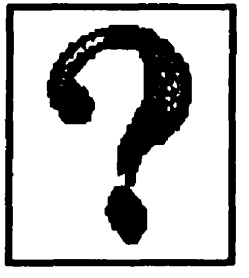
WHY visit a pre-travel health clinic before leaving on my trip?

- **15-55%** of travelers to *tropical and sub-tropical destinations* suffer travel-related illnesses (see map on back).
- Clinic staff are experts in travel medicine and will provide you with *up-to-date* information on vaccines, medications and preventive advice.
- **Prevention is the best protection! Go prepared!**

Who needs a pre-travel health consultation?

ALL travellers to *tropical and sub-tropical destinations**, ESPECIALLY:

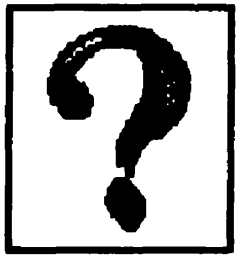
- Travellers to rural areas
- Travellers to multiple destinations
- Travellers with medical conditions (i.e. diabetes, AIDS)
- Immigrants returning to visit relatives/friends
- Those who travel frequently
- Persons needing booster shots against common illnesses (i.e. polio, tetanus, diphtheria, measles, etc)



What does a visit involve?

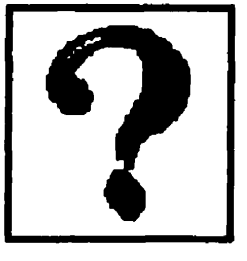
Personalized travel health advice about:

- Required and recommended vaccinations
- Anti-malarial drugs
- Preventive measures against malaria, dengue, traveller's diarrhea, etc
- Booster shots for common infectious diseases, if required
- Travel to high altitudes, travelling with children and travelling with existing medical conditions
- Health care abroad



When should I go?

As soon as possible! It is recommended that travellers have their first visit at least **4 to 6 weeks before departure**. This leaves enough time to schedule vaccinations if they are necessary. However, it is *never too late* to make an appointment.



Where can I find a pre-travel health clinic?

See the inside flap of this brochure for the names, addresses and telephone numbers of local travel health clinics. Have a healthy trip!

* see map on back

Island of Montréal Travel Health Clinics

Central

McGill Centre for Tropical Diseases
Montréal General Hospital
1650 Cedar Avenue, Room D7-153
Phone: (514) 934-8049

Centre de médecine de voyage du Québec
1001 rue Saint-Denis, 6th floor
Phone: (514) 281-3295

North

Clinique Santé-Voyage
Hôpital du Sacré-Coeur de Montréal
5400 boul. Gouin
Phone: (514) 338-2222 ext. 3169

East

Clinique du Voyageur
1374 boul. Mont-Royal Est
Phone: (514) 521-0630

Clinique santé-voyage de Montréal
Hôpital Maisonneuve-Rosemont
4515 boul. de l'Assomption
Phone: (514) 252-3400 ext. 3890

South

Clinique du Voyageur
40 Place du Commerce, Ile des Soeurs
Phone: (514) 769-1099

West

CLSC Pierrefonds
3675 boul. des Sources, Suite 201
Phone: (514) 626-2572

Tropical and sub-tropical Destinations (in red)

Stay Healthy Abroad ...

Visit your local travel health clinic before departure

Voyagez-vous dans les destinations tropicales?

Voyagez en bonne santé!

Pourquoi visiter une clinique santé-voyage avant le départ?

- Entre 15 et 55% des voyageurs à *destination tropicales ou subtropicales* souffrent de maladies associées au voyage (voyez la carte au dos).
- Le personnel des cliniques est constitué d'experts en santé-voyage qui vous fourniront des renseignements *à jour* sur les vaccinations et les médicaments et vous donneront des conseils préventifs.
- **Mieux vaut prévenir que guérir! Soyez informé!**

Qui a besoin d'une consultation de santé pré-voyage?

TOUT voyageur aux *destinations tropicales et subtropicales**, **en particulier:**

- ceux qui voyagent aux endroits ruraux
- ceux qui voyagent à plusieurs destinations
- ceux qui ont des problèmes de santé sérieux (i.e. le diabète, le SIDA)
- les immigrants qui retournent visiter leur pays d'origine
- ceux qui voyagent fréquemment
- ceux qui ont besoin d'être revaccinés contre les maladies évitables par vaccination (i.e. la poliomyélite, le tétanos, la coqueluche, la rougeole, etc)

Qu'est-ce qu'une visite implique?

Des conseils de santé-voyage *personalisés* concernant:

- les vaccinations requises et recommandées
- les médicaments antipaludéens
- les mesures préventives contre le paludisme, la dengue, la diarrhée des voyageurs, etc.
- des rappels contre les maladies évitables par vaccination, si nécessaire
- des recommandations concernant le voyage aux hautes altitudes, ou avec enfant(s) ou problème(s) de santé
- des conseils sur les soins de santé à l'étranger

Quand dois-je y aller?

Au plus tôt! Une première visite à la clinique santé-voyage est recommandée au moins **4 à 6 semaines avant le départ**. Cela laisse assez de temps pour programmer les vaccinations, si elles sont nécessaires. Cependant, ce n'est *jamais trop tard* d'y aller.

Où sont les cliniques santé-voyage à Montréal?

Voir le rabat intérieur de ce dépliant pour les noms, addresses et numéros de téléphone des cliniques santé-voyage locales. Bon voyage!.... en bonne santé!

* voyez la carte au dos

Les cliniques santé-voyage à Montréal

Centre-ville
Centre des maladies tropicales
Hôpital Général de Montréal
1650 ave. Cedar, Suite D7-153
(514) 934-8049

Centre de médecine de voyage du Québec
1001 rue Saint-Denis, 6ième étage
(514) 281-3295

Nord
Clinique Santé-Voyage
Hôpital du Sacré-Coeur de Montréal
5400 boul. Gouin ouest
(514) 338-2222 poste 3169

Est

Clinique du Voyageur
1374 boul. Mont-Royal Est
(514) 521-0630

Clinique santé-voyage de Montréal
Hôpital Maisonneuve-Rosemont
4515 boul. de l'Assomption
(514) 252-3400 poste 3890

Sud
Clinique du Voyageur
40 Place du Commerce, Ile des Soeurs
(514) 769-1099

Ouest

CLSC Pierrefonds
3675 boul. des Sources, Suite 201
(514) 626-2572

Les destinations tropicales et subtropicales (en rouge)

"Santé" vous bien en voyage...

Avant le départ, visitez votre clinique santé-voyage locale

Quick Guide :

Who
What
When
Where
Why!

Travel Health Links:

Canadian Health
Hazard Advisories
(Health Canada)

Detailed Travel Health Information by
Geographic Region
(CDC)

Yellow Fever
Vaccination Requirements (Health Canada)

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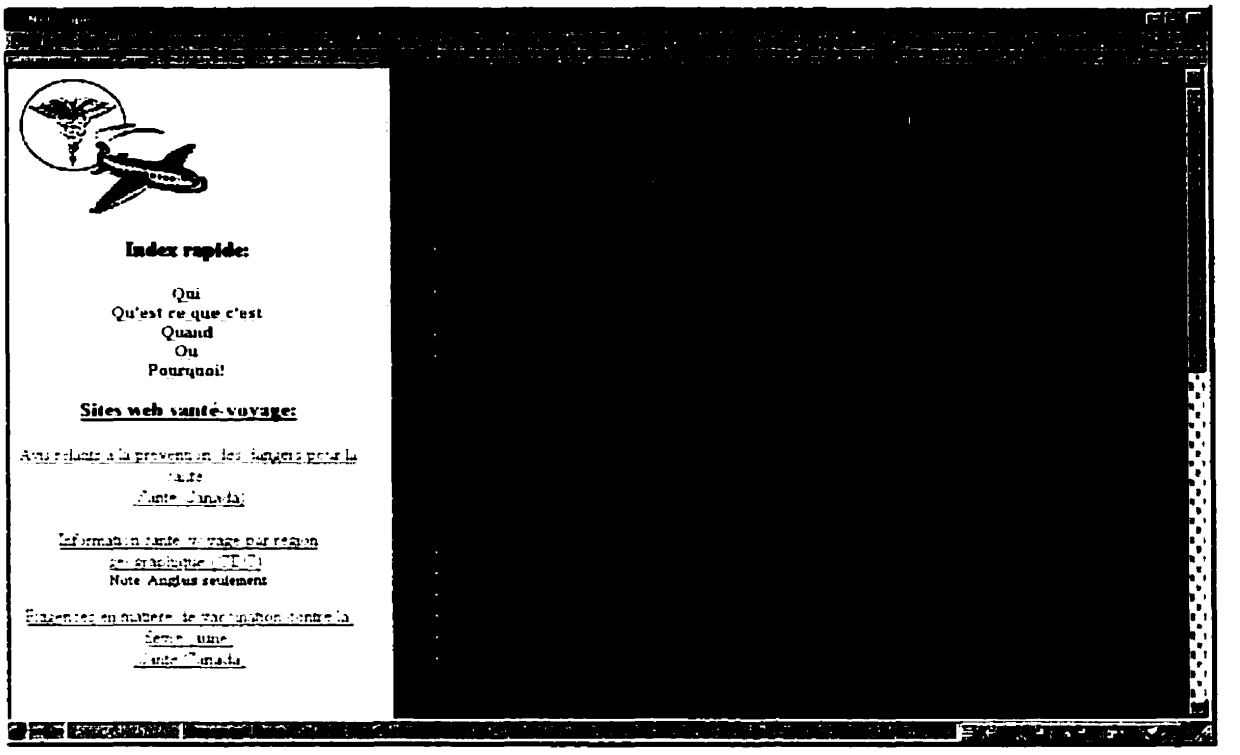

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Qu'est ce que c'est
Quand
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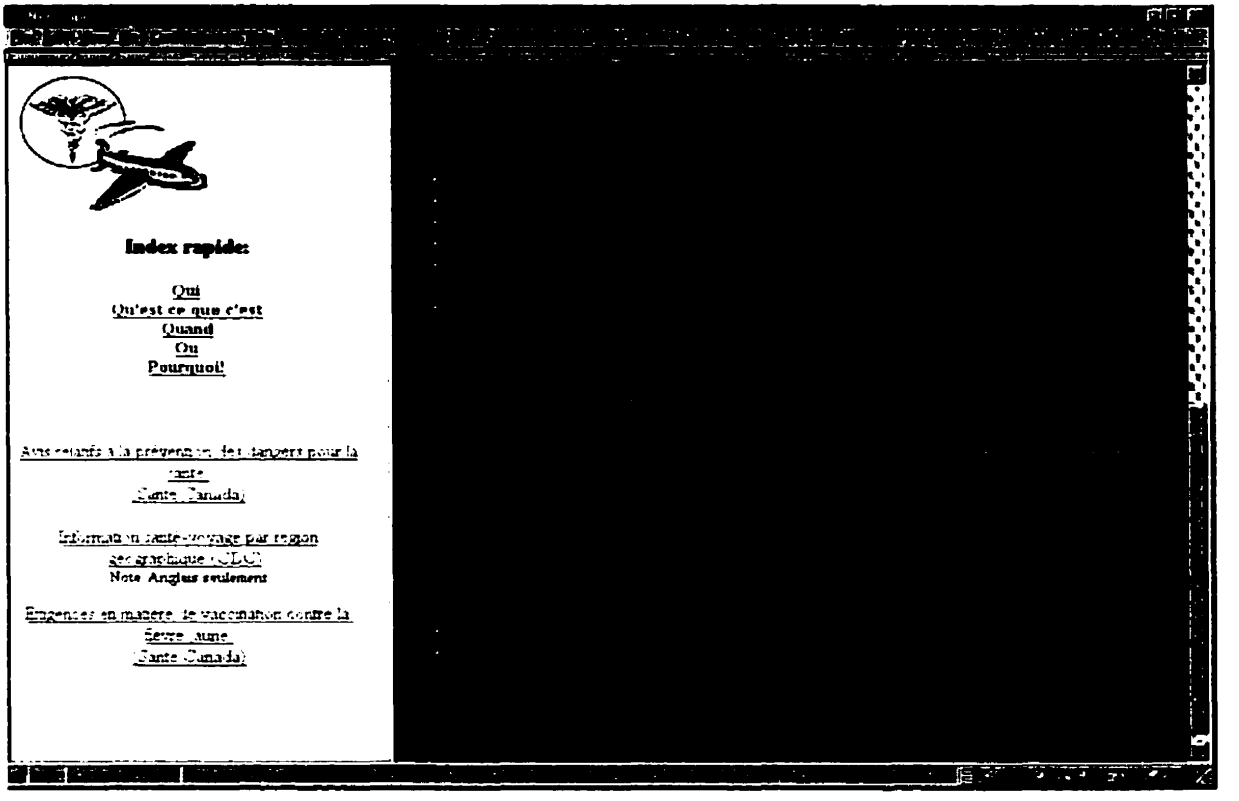
Pourquoi!

Sites web santé-voyage:

Avis relatifs à la prévention des risques pour la santé
(Santé Canada)

Information santé-voyage par région géographique (CDC)
Note Anglais seulement

Exigences en matière de vaccination contre la fièvre jaune
(Santé Canada)



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Appendix 4: Ethics Approval