

Potential of Electronic-Ticketing to enhance the uptake of travel health interventions

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Abstract Background

In recent years, advances in Electronic-Ticketing (ET) systems instituted by the airline industry are enabling a growing number of travellers to conveniently use the internet to plan and book their trips. However, little is known about the type of health information that airlines display on their ET sites and how this service can be used to improve the uptake of pre-travel health advice and interventions. This paper assessed the level of health information that is displayed on the ET sites of the main airlines flying to Africa. In addition, it explores how ET system can be used to enhance the uptake of pre-travel health advice and interventions. Methods

The ET pages of airlines with intercontinental flights to and from Africa were extensively navigated to assess the type of health information that is displayed on their respective ET sites.

Results

A total of 36 airlines with intercontinental flights to Africa were identified. Slightly above half (55.5%) of these airlines provided any form of information on travel health on their ET sites. Of this number, a few airlines specifically highlighted the need for the traveller to adopt appropriate preventive measures against travel thrombosis (22.2%), jet lag (11.1%) or fear of flying (8.3%). Similarly, three airlines (8.3%) recommended personal protection measures against mosquito bites (PPM) while seven suggested both chemoprophylaxis and PPM (19.4%). Likewise, 11 airlines (30.6%) recommended vaccination against yellow fever either as a stand-alone vaccination (19.4%) or alongside other vaccines (e.g. rabies, typhoid, meningitis, cholera, hepatitis).

Conclusion

This study illustrates that the level of health information that most airlines provide on their ET sites is unsatisfactory, both in content and in depth and therefore, for optimal customer service, airlines should consider to provide their travellers with appropriate and comprehensive pre-health advice on their ET sites.

Key words

Electronic-Ticketing, airlines, travel health, pre-travel health advice.

Introduction

Among the worldwide 880 million international travellers in 2009, 467 million (53%) chose a plane for their journey.¹ This choice may represent the only option for people wanting to travel to distant and hard-to-reach continents like Africa. Upon arrival in some of these destinations in Africa, travellers may be exposed to a variety of health conditions including preventable diseases.^{2,5} The majority of travel associated infections can be prevented if travellers would adhere to existing travel health guidelines.^{3,6,8} However, compliance with these guidelines continues to be very low in travellers.^{9,13} Although this low uptake can be partly attributed to the general reluctance by travellers to seek pre-travel health advice, the virtually non-existent recommendations by the air transport industry in the past might have also contributed.

To improve this low uptake, several authors^{3,6,12} have highlighted the need to identify innovative ways of reaching travellers for health advice prior to departure. One potential channel that can be used to reach travellers is Electronic-Ticketing (ET) systems because an increasing number of travellers use these systems¹⁴ to plan and book their trips. ET systems were first introduced in 1994 by the United Airlines¹⁴ and by 2008 virtually all airlines have adopted and implemented these

systems.¹⁵ Although this recent development in ET systems may greatly limit contacts with travel agents and other channels that theoretically could have played a role in informing travellers of travel-associated health risks, the systems clearly have considerable potential in reaching a wider travel community. However, little is known about the type of health information that airlines display on their ET sites and how this service can be used to improve the uptake of pre-travel health advice and interventions. This paper therefore presents the level of health information that is displayed on the ET sites of the main airlines flying to Africa. In addition, it explores how ET systems can be used to enhance the uptake of pre-travel health advice and interventions.

Methods

The website of the International Air Transport Association (IATA) was used to identify airlines with destinations in Africa. IATA has 230 registered airlines and accounts for 93% of the total global air traffic.¹⁶ The member airlines are classified into geographic regions and this classification was used as a basis for identifying airlines with destinations in Africa. In brief, the "Membership" page of IATA¹⁷ was first consulted in order to view the different airlines per region (Africa, Europe, Middle East and North America) and the links to their respective websites. These links were then followed in a systematic manner to enter in to the main ET page of each airline. Once on an ET page, a quick search was performed to verify whether the airline in question has destinations in Africa. This was done by clicking on "Destinations", "Where we fly to" or "Route maps". This brief search displayed a world map with "dots" that corresponded to the various departure and arrival cities. Airlines with maps that had dots in Africa, which were linked with a line to other geographic regions (North America, Europe and Middle East), were selected. The survey primarily focused on airlines from Africa, Australia, Europe, Middle East and North America with an African destination. Airlines from Asia and South America were excluded mainly because the epidemiology and health care systems are somehow similar to those in Africa.

After the airlines were identified, the ET sites of the respective airlines were extensively navigated to assess the level of health information that they provide on their ET pages. The specific questions that were examined include: 1) the type of health information provided; 2) the number of mouse clicks to get to a health page; 3) advice on preventive measures, mainly advice on malaria prophylaxis and vaccinations; 4) reference to an institution for health advice; 5) presence of a lead questions or data field on travel health or vaccination; and, 6) mention of vaccination/travel health on the "Frequently Asked Questions" (FAQs) section. To increase the sensitivity of the survey, a search was run in the search menu of each ET page using the search terms; health, malaria and vaccination.

Results

A total of 36 airlines, representing 15.7 % of the total number of airlines registered with IATA were found to have intercontinental destinations in Africa. Of this number, 15 were from Europe, nine from Africa, nine from the Middle East, two from the United States of America and one from Australia. All of these airlines had functional ET web pages which showed great similarity in the basic elements that were displayed on the home page. These basic elements included, in almost all of the cases, items like "book a flight", "hotel", "rent a car", and tourism ads. Unlike these basic elements that appear to be similar, the nature in which health information was displayed as well as its location varied from airline to airline.

Table 1 shows the main characteristics of health information displayed on an ET page. As can be seen, while all included airlines provided information on special needs (services provided to the disabled traveller, traveling with children or pets, advice to pregnant passengers), slightly above half (55.5%) of the airlines provided any form of information on travel health. Of this number, a few airlines specifically highlighted the need to adopt appropriate preventive measures against certain conditions that are associated with air travel like travel thrombosis (22.2%), jet lag (11.1%) or fear of flying (8.3%).

Similarly, the proportion of airlines that provided practical information on the prevention of tropical diseases was low with three airlines (8.3%) recommending personal protection measures against mosquito bites (PPM) and seven (19.4%) proposing both chemo-prophylaxis and PPM. Likewise, 11

airlines (30.6%) recommended vaccination against yellow fever either as a stand-alone vaccination (19.4%) or alongside other vaccines (e.g. rabies, typhoid fever, meningitis, cholera, and hepatitis). Although some airlines (Table 1) mentioned these diseases on their ET sites, only four (11.1%) specifically recommended vaccination against some of these conditions.

Regarding referral, ten airlines (27%) referred the traveller to an institution for health advice (Table 1). As can be seen, airlines tend to refer the traveller to a General Practitioner (11.1%) or a travel clinic (16.6%) compared to standard health institutions like the Center for Disease Control and Prevention (CDC).

Overall, seven travel clinics were identified; two of which are in Africa (South African Airways Netcare travel clinics¹⁸) and Afriqiyal Medical Services) and five in Europe including KLM travel clinics¹⁹, Medical Advisory Services for Travellers Abroad-MASTA²⁰, referenced by British Airways); the BAD group²¹ (referenced by Air Berlin); Swiss Medical Services²² (referenced by Swiss) and "Centre International de vaccination Air France"²³, (referenced by Air France). Apart from the vaccination centre of Air France, the Afriqiyal Medical services and Swiss Medical services that seem to be departments within the airline, the other travel clinics exist as a network of clinics with a significant presence in the host country. One airline (2.7%) contained a link to a reference health institution-the Center for Disease Control and Prevention²⁴ (referenced by Delta Airlines). This link was not easily visible and required about 5 mouse clicks. Although not easily visible, the health information it displayed was far more comprehensive compared to what other airlines displayed on their ET sites.

Table 1 also shows that only two ET sites (5.6%) had a FAQ on vaccination/travel health on their FAQ section. Similarly, while almost all of the ET sites contained specific questions or data fields that offer the traveller the opportunity to purchase additional services such as travel insurance, hotel reservations and car rentals, or to sign up for e-news in order to get updates on flight status, none of these sites had a specific question that offered the traveller the opportunity of being provided with pre-travel health advice or a reminder on the importance of adopting appropriate preventive health measures.

Discussion

This survey included airlines from Europe, North America, Africa, Middle East and Australia with destinations in Africa. The reason for this choice was that Africa accounts for only 3% of the total global air traffic²⁵ and therefore selecting airlines with destinations in this region would guarantee a manageable sample size. In addition, it was assumed that airlines with destinations in Africa are aware of the high endemicity of some infectious diseases, the poor hygienic conditions and sub-standard health facilities and for optimal customer service should provide travellers with appropriate pre-health advice on their ET sites. However, this survey revealed that only about 55.5% of airlines provide health information on their ET sites. In general, this information was not easily visible and required an extensive navigation of the site; an activity that only few travellers may be willing to perform.

Only a small proportion (36.1%) of airlines with destinations in Africa suggested preventive strategies anti-malaria measures and vaccination against yellow fever. This finding was somehow least expected because of the high incidence of malaria²⁶ and the mandatory requirement for a yellow fever vaccination certificate⁸ for some destinations in Africa which could theoretically have influenced airlines to provide this information; however, this apparently was not the case as only a few airlines presented this information.

Moreover, although four ET sites recommended, in addition to yellow fever, other vaccines against conditions that are widely prevalent in Africa such as hepatitis A, meningococcal meningitis, typhoid fever and rabies, none of these sites mentioned the need for immunization against measles or cholera even though there were outbreaks in some African countries.^{27,28}

Furthermore, few airlines referred the traveller to a travel clinic (19.4%) or a well established reference health institution like the CDC (2.7%). This observation probably highlights that airline agencies are less aware of the services offered by these institutions. However, awareness of such

services might be relevant for today's travel community. Given that travellers are usually satisfied with advice provided by travel health specialist²⁹ and that reference institutions like the CDC²⁴ provide more comprehensive health information compared to the airline, greater collaboration may be needed between the travel health community and airlines in informing travellers of travel-associated health risks. Such collaboration may be vital in identifying and targeting travellers who may benefit from travel health interventions, e.g. by directing the traveller to a national expert website wherever such exists, or even to a list of travel clinics in the country of residence at the time of ticket purchase. Although our survey did not identify a single link to the travel health publication of the World Health Organization,⁷ such link may also be useful in providing appropriate pre-travel health advice particularly in countries where no national websites exist.

The fact that only 2 airlines had a FAQ on health on their ET sites may indicate that travellers have not previously asked airlines questions concerning health. Nonetheless, it may be beneficial to include a FAQ on travel health as FAQs represent a fast means of locating information.

By experience, airlines and the travel industry in general are reluctant to provide travellers with detailed and up to date health information; partly for lack of interest, partly for concerns of deterring future customers from travel, and additionally these institutions are not well positioned to perform such tasks for lack of medical competence. The later challenge may be overcome by electronically linking travellers to travel health experts or clinics. This may be done by including a specific question on the ET page that offers the traveller the opportunity of being provided with pre-travel health advice or a reminder on the importance of adopting appropriate preventive health measures against health risks that are prevalent in a particular destination. If successful, this strategy may ultimately serve as useful channel in protecting the traveller from travel-associated conditions and accordingly spare the individual, the insurance companies and the society from the huge cost of travel-associated diseases. There may also be profit for the airlines, as the customers will realize that customer care and good quality are important issues for that carrier. Consequently the travel health community should liaise with the airline industry to enhance the quality of those ET pages to keep travellers healthy.

Although this survey provides valuable information on the state of health information displayed on ET sites, certain limitations must be acknowledged. First, the survey focused primarily on airlines with direct flights to/from Africa; a continent that accounts for only 3% of the total global air traffic.²⁵ Perhaps, if the survey was expanded to include all the 230 air-lines registered with IATA and other internet booking sites like Expedia, Cheap flights, "Orbitz", Travelocity, "FareCompare" "flycheap", or "flugtickets" other vital information might have been noted. Second, the survey used a non validated methodology to assess information whose presentation varied from airline to airline. This methodology and variance could have probably introduced some bias. With further reach in to this area, it may be possible to standardize a methodology that can be used to generate information.

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ET: Electronic-ticketing; CDC: Centre for Disease Control and Prevention; FAQ: Frequently Asked

Table 1
f health information displayed on an ET page

Type of health information displayed on an ET page	n	%
Provides information on special needs (e.g. service to the disabled or pregnant traveller, traveling with children or pets)	36	100
Provides information on travel health	20	55.5
Provision of practical health information necessary to prevent:		
Travel Thrombosis	8	22.2
Jet Lag	4	11.1
Fear of flying	3	8.3
Malaria	10	27.7
Yellow fever	11	30.6
Typhoid fever	9	25.0
Food and water borne diseases excluding typhoid fever	2	8.3
Sexually transmitted diseases including Human Immunodeficiency Virus (HIV)	2	8.3
Others (Cholera, Rabies and Schistosomiasis)	4	11.1
Recommendation of prophylactic measures against malaria and vaccine preventable diseases		
Anti-malarial measures		
Site recommends personal protection measures against mosquito bites (PPM) only	3	8.3
Site recommends anti-vector measures only	7	19.4
Immunization		
Site recommends only yellow fever vaccine	7	19.4
Site recommends both yellow fever and other necessary vaccines	4	11.1
Sites refer travellers to any institution for health advice	15	41.6
Type of institution		
Embassy	1	2.7
Country office	1	2.7
General Practitioner	4	11.1
Travel agent	1	2.7
Travel clinic	7	19.4
Reference health authority (e.g. CDC)	1	2.7
Site contains a specific question on travel health on ET page	0	0
Site mentions vaccination/travel health in FAQs section	2	5.6