Artigo Original

Pre-travel consultations quality criteria: a Delphi consensus

Critérios de qualidade nas consultas pré-viagem: um consenso Delphi

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Resumo

Com o crescimento exponencial de viagens ao nível global durante as últimas décadas, a saúde do viajante tornou-se uma questão premente. O turismo internacional, as deslocações profissionais e os fluxos migratórios contribuíram para este fenómeno, que centrou as atenções de organizações internacionais e autoridades nacionais nos riscos associados à propagação de doenças infeciosas. As preocupações crescentes acerca da transmissão de doenças emergentes e reemergentes, conferiu uma visibilidade global à medicina do viajante e impõem a definição de padrões de qualidade na atenção à saúde deste grupo de indivíduos O presente estudo visou obter um consenso alargado sobre os critérios de avaliação de qualidade para o aconselhamento de pré-viagem entre médicos em Portugal e Brasil baseado no método Delphi, utilizando critérios internacionais e estudos científicos como referência. Integrando os critérios consensuais obtidos no estudo, o nosso modelo identifica diferenças nos critérios de qualidade entre os dois grupos de peritos. Contudo, estes destacaram a importância dada a recursos humanos qualificados, a qualidade de informação para viajantes e profissionais de saúde, procedimentos estandardizados e ao diagnóstico em tempo útil. Os casos de Portugal e Brasil demonstram a importância de realizar mais estudos sobre a qualidade de consultas pré- e pós-viagem ao nível nacional e transnacional.

Palavras-chave:
Medicina das viagens, Delphi, avaliação de qualidade, consultas pre-viagem, Portugal, Brasil.

Abstract

With the exponential growth of international travel over the last decades, the question of travellers' health has taken on a crucial importance. International tourism, occupational travel and migratory fluxes have all contributed to this phenomenon which has drawn the attention of international organizations and national authorities on the risks associated with the spread of infectious diseases. The increasing concerns over emerging and re-emerging diseases has raised the global profile of travel medicine, urging the setting of quality standards in clinical practice and service delivery to travellers. The present study aimed to obtain a broad consensus on quality assessment criteria for pre-travel advice among practitioners in Portugal and Brazil based upon the Delphi method, using international criteria and standards and scientific studies as benchmarks. Our proposed model which integrates the consensual criteria obtained in our study, identified differences in quality criteria between the two expert groups. Nevertheless, they did highlight the importance attributed to qualified human resources, the quality of information for travelers and health professionals, and timely diagnosis, amongst others. The cases of Portugal and Brazil discussed here, underscore the need for more studies on the quality of pre- and post-travel consultations at national and transnational level.

Key words:
Travel medicine, Delphi, quality assessment, pre-travel consultations, Portugal, Brazil.

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Introduction

International travel registered a considerable increase over the last decades. The world population grew by a factor of 2.6 during the last fifty years and international travel by a factor of 35 [1,2]. International tourism involved 1.3 billion arrivals in 2017, half of the total in Europe, a quarter in the Asia and Pacific region, a sixth in the Americas and nearly five per cent for each Africa and the Middle East regions [3]. The steady growth of the number of regional and global travellers associated with international tourism, occupational travel and migratory fluxes, not only affected industrialised nations but also low-income countries. Travelers may be exposed to various risks involving environmental and cultural aspects, which would contribute to the emergence of travel-related illnesses. In addition, emerging and re-emerging diseases are a concern in many regions of the world [4,5]. Therefore travel-related disorders gained greater prominence in public health policies and biomedical research while travel medicine, associated with tropical medicine, emerged as a medical specialty focused on pre-travel preventive care [6,7]. Distinct categories of high-risk groups with a significant impact upon health-based determinants have emerged, such as visiting friends and relatives (VFR), associated with higher morbidity and mortality rates, and post-travel complications [8,9]. It is worth noting that only a small number of travellers seek pre-travel advice, both because of a lack of awareness about the need for consultation and the lack of available services [10-13].Traveler's health and safety depend on a practitioner's level of expertise and on the travelers' compliance with the preventive measures prescribed or advised. The rise of the specialty in travel medicine in the 1980s prompted a global debate on the regulation of

the quality standards in clinical practice and service delivery to travellers. As countries began to introduce specific legislation to regulate the activities of travel clinics and professional medical bodies strove to introduce uniform standards, international institutions emerged with a global reach. The International Society of Travel Medicine (ISTM) founded in 1991, followed the first international conference on travel medicine held in Zurich (Switzerland) in 1988. Currently, the ISTM is a global network with members in more than 90 countries, including academic, government and private institutions, responsible for the dissemination of knowledge on travel medicine [5]. In the European Union (EU), agencies such as the European Network for Tropical Medicine and Travel Health (TropNet Europe) and collaborative networks such as the European Travel Medicine Network (EuroTravNet) – initially funded by the European Centres for Disease Control (ECDC) and currently by the ISTM - which in turn reports to the GeoSentinel Global Surveillance Network, are responsible for the epidemiological surveillance of diseases and disorders associated with travellers and migrants in the EU [14, 15].

A worldwide survey of travel clinics identified a broad variety in terms of organization and service delivery, as well as marked differences in training and skills among the health professionals involved, urging the development of guidelines for the quality of care and training [16]. Differences in service provision are associated with historical factors in terms of public health systems and the evolution of the specialty in individual countries. The definition of quality criteria for pre-travel consultations in Travel Medicine is essential since it encompasses various disciplines - epidemiology, infectious diseases, tropical medicine, public health and occupational medicine while involving a wide range of professionals. In 1999, the ISTM established a group of experts to define the aims and scope of knowledge on travel medicine. The report "Body of Knowledge for the Practice of Travel Medicine" was published in 2002 and updated in 2012 and in 2017 outlining the basic concepts, principles of pre- and post-travel consultations, risk assessment and immunization for health professionals in the field [17].

While geographically separated by the Atlantic Ocean, Portugal and Brazil have common historical and cultural bonds and Portuguese as their official language. The differences between the two countries in terms of the organization of travel medicine is set out below.

Travel Medicine in Portugal

Travel medicine emerged in Portugal after World War II, with the obligation for settlers moving to its erstwhile colonies to receive pre-travel training in tropical health and hygiene and vaccination at the Institute of Hygiene and Tropical Medicine (IHMT), the Colonial/Overseas Hospital (currently Egas

Moniz Hospital) in Lisbon and the Hospital of Coimbra [18]. The vaccination service started at the IHMT in 1943, with the administration of the yellow fever vaccine, later adding other vaccines. Following the 2005 revision of International Health Regulations, yellow fever vaccination centers (International Vaccination Centers – IVC) were established in different public health services. Currently all these centers provide pre-travel consultations associated with immunization; only physicians give pre-travel advice. The Directorate-General of Health (DGS) pertaining to the Ministry of Health sets national standards for all service providers in the Portuguese health system. Currently there are 41 IVC throughout the country, i.e. in mainland Portugal and the autonomous regions of Madeira and the Azores integrated in public primary health care centers, public hospitals and clinics.

Yellow fever and typhoid fever vaccines can only be administered at IVC and a medical prescription is required; the centers provide the certificate of vaccination. IVC installed in primary health care units have a geodemographic area of intervention associated with travelers' area of residence, unlike those that are part of hospitals and the IHMT. Vaccines of the National Vaccination Plan are managed in primary health care units; vaccines against hepatitis A or hepatitis B, against Japanese encephalitis, meningococcal disease, rabies, or tick-borne encephalitis are acquired by travelers at pharmacies and administered in licensed pharmacies or health centers [19].

While international vaccination centers limit themselves to pre-travel consultations, post-travel consultations are performed in public hospitals′ emergency services or consultations by appointment. An undetermined number of travel medicine consultations - for which there is no official register - are given in private medical clinics. The Institute of Hygiene and Tropical Medicine (IHMT) which is public but not part of the Portuguese national health system (SNS), is the single biggest provider of consultations in travel medicine in the country (approx. 11,000 a year).-

Travel medicine is considered a medical competence recognized by the Portuguese College of Physicians. Guidelines for the practice of travel medicine are based on standards issued by international organizations such as the World Health Organization (WHO) or national bodies of other EU and non-EU countries regarded as credible. The Portuguese Society of Travel Medicine was established in 2015, serving as a forum for discussion for health professionals working in the field [20]. MDs (Doctors of Medicine) are allowed to give consultations for travelers with or without training in the field. They include family general practitioners (GPs), public health MDs, infectious disease specialists, pediatricians, tropical medical specialists, or other medical specialties. Nursing staff administer vaccines and give advice on the adverse effects of vaccination. In Portugal, the curricula of undergraduate programs in nursing do not currently include the area of travel medicine or tropical medicine. Over the last ten years, the Institute of Hygiene and Tropical Medicine has administered a post-graduated specialization in travel medicine for MDs and nurses. Other post-graduate courses in travel medicine are administered at the University of Oporto and the Regional Health Administration in the North of the country, So far, few studies have been carried out on quality standards and assessment of travel medicine practice in Portugal [21, 22]. In 2001, a study was conducted with national experts in order to elaborate uniform criteria for the evaluation of travel medicine consultations [10].

Travel Medicine in Brazil

Travel Medicine emerged in Brazil in the late 1990s, in the context of universal health coverage. The National Health Surveillance Agency (ANVISA),an autharchy of the Ministry of Health (MS), along with the health surveillance secretariat of the MS are responsible for epidemiological surveillance activities and vector control regarding ports, airports and national borders. The autharchy coordinates Travel Health Centers, which are responsible for issuing the International Certificate of Vaccination or Prophylaxis (CIVP) [23]. The first travel medicine service in Brazil was established in 1997 at the Faculty of Medicine of the Federal University of Rio de Janeiro (UFRJ). Throughout the first decade of 2000s travel medicine clinics were set up in public universities and public referral services in infectious diseases in the southeastern region of the country [24, 25]. Two public travel clinics were set up in the state of São Paulo: one at the University of São Paulo (USP) at Ribeirão Preto and other at the Federal University of São Paulo (UNIFESP). The Brazilian Society of

Travel Medicine was established in 2008, but travel medicine has so far not been officially recognized as a medical specialty. The expansion of both public and private travel medicine clinics in the country was not followed by quality assessment of those practices in Brazil or in South America. There is no formal assessment of clinical standards and quality of service delivery in travel medicine in Brazil [25].

There are currently 118 centers distributed throughout the 27 Brazilian states, located in ports, airports, border areas, outpatient clinics at universities and research institutes, health facilities and accredited private clinics [23]. Pre-travel advice is not a prerequisite for the issuing of international vaccination certificates and is more commonly performed in educational and research institutions and private health units. Therefore, most of those centers do not offer pre-travel consultation. Primary health units, responsible for vaccines of the National Vaccination Plan, also perform yellow fever immunization and issue a certificate that is exchanged for CIVP at the ANVISA centers.

Pre-travel advice is generally given by physicians. Nursing practices are focused on immunization, because of the absence of an institutional organization [26] or limited specific qualifications in travelers' health for those professionals. Travel medicine clinics established in the state of São Paulo account for the training of undergraduate, graduate and postgraduate students at the Medical school of the University of São Paulo; the Institute of Infectious Diseases Emílio Ribas, USP in Ribeirão Preto and UNIFESP [24]. In Rio de Janeiro, the Federal University of Rio de Janeiro offers Travel Medicine courses to graduate students in Medical School; other short-term courses are occasionally offered by universities or research institutes.

Methods

The Delphi consensus

Obtaining consensus criteria among experts allows for the comparison between resource inputs, their organization (structure), the delivery of goods and services and their results on the one hand; and the criteria and standards provided by international health organizations and studies on travel medical practice on the other [27]. In this study we aimed to obtain quality assessment consensual criteria of pre-travel consultations in Portugal and Brazil. We used the Delphi method to obtain consensus among experts in travel medicine on the quality assessment criteria for pre-travel advice [28].

Study definitions

(a) Experts were defined as medical specialists (in tropical medicine, infectious diseases, public health, general practice, and pediatrics) working in the field, with a minimum of two years professional experience and/or specific training in travel medicine ; (b) Quality criteria were defined as value judgments that are applied to several aspects, properties, ingredients or dimensions of medical care; norms were defined as the general rules that apply to the quality assessment process while standard is a precise count or quantity that specifies an adequate, acceptable or optimal level of quality [30];

(c) Consensus definition included those criteria both accepted by 2/3 of participants of the panel and that reached a score> = 4[29].

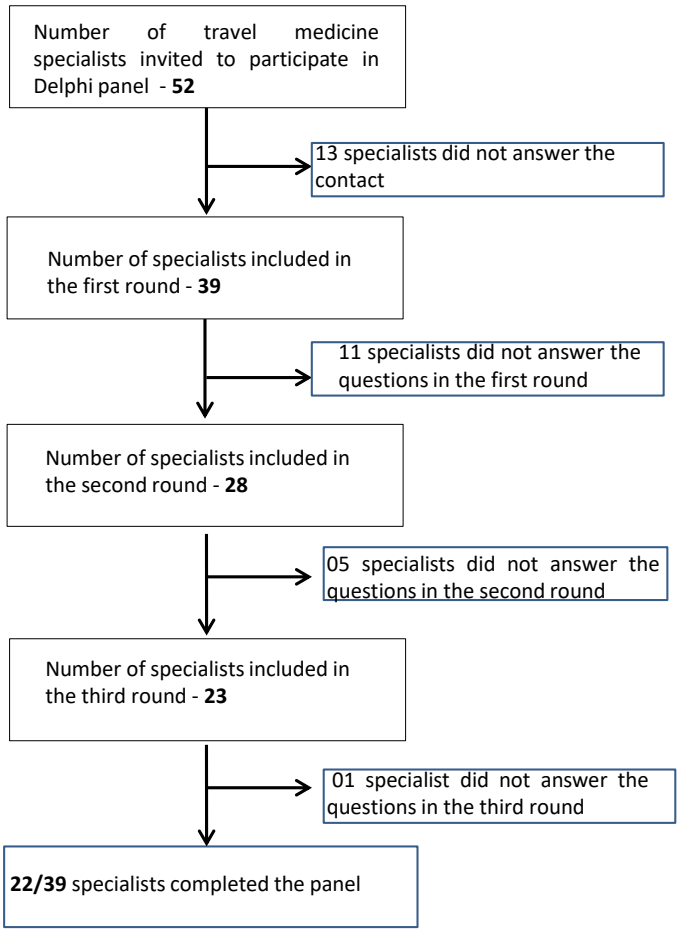
Delphi panel

Experts who agreed to participate received a data collection form specially designed for the research enquiry by email. The sequential dimensions conceptualized by Donabedian, in his quality of care framework, were used here: structure, process and outcome [30]. In the first round, specialists were asked to freely record at least three criteria to assess quality of pre-travel consultation in the three aforementioned dimensions. The initial statements were read by the researchers and similar ones were merged to elaborate the criteria lists for each dimension. In the second round, new lists were sent to specialists who were asked to choose and rank five criteria out of each list. The lists containing the criteria voted and ranked were sent to the experts in the third round, asking them to choose and rank seven criteria out of each list. Consensus was assessed after the third round. The panel was held between November 2015 and February 2016. The report "Body of Knowledge for the Practice of Travel Medicine' was used to set the standards of knowledge and practice in the field, i.e. a normative standard [17]. Data analysis was performed using Microsoft Excel and SPSS 20.

Results

A total of 52 Portuguese specialists were identified among 25 health facilities, referenced for immunization and traveller counselling in different regions

Figure 1 - Flowchart of Delphi process



of Portugal, from all over the country. Thirty-nine professionals agreed to participate and were included in the Delphi Panel. We obtained responses from 22 participants after three rounds (Figure 1). Most specialists were men (65.2%); median age: 57 years old (range 31-69); mostly trained in public health (52.2%) followed by infectious diseases (34.8%). Average professional experience in travel medicine was 11 years (range: 2–30). The panel included participants from Lisbon (34.8%), Oporto (21.7%), Coimbra (17.4%), Matosinhos (8.7%), Setúbal (8.7%), as well as the Algarve (4.3%) and Madeira (4.3%) regions. Many criteria were enumerated by Portuguese specialists and were subsequently consolidated in a typology of criteria. The most frequent types were organizational system (structure), functional (process) and health criteria (result) (Table 1).

In Brazil, 28 specialists were identified among 15 institutions recognized as immunization reference by ANVISA and among reference outpatient clinics of universities and research institutes in Southeast and Southern regions of Brazil. Fifteen specialists were invited for the Delphi panel and five agreed to participate. Thirteen did not answer the contact. We decided to adapt Delphi panel considering the limited number of Brazilian experts available. In the first-round Brazilian experts were given the criteria obtained in the Delphi panel among Portuguese specialists. The panel was undertaken in two rounds. Most specialists were women (75.0%); median age: 60.2 years old (range 31-69); mostly trained in infectious diseases (75.0%). Average professional experience in travel medicine was 12 years (range: 5–17). The panel included participants from Rio de Janeiro (40.0%), São Paulo (40.0%) and Paraná (20.0%). The resulting consensus criteria of experts from Portugal and Brazil are presented in Table 2.

The consensus criteria of experts from the two

Table 1 - Distribution of types of criteria elaborated in Delphi specialists' panel according to dimensions – Portugal

Dimensions	Types of criteria	First round	Second round	Third round
		n (%)	n (%)	n (%)
Structure		N=104	N=38	N=32
	Physical environment and buildings	25(24.0)	7(18.4)	6(18.8)
	Equipment	8(7.7)	1(2.6)	1(3.1)
	Human Resources	25(24.0)	8(21.1)	6(18.8)
	Information	9(8.6)	6(15.8)	6(18.8)
	Organizational System	35(33.6)	15(39.5)	12(37.5)
	Politics	2(1.9)	1(2.6)	1(3.1)
Process		N=99	N=52	N=29
	Technical	27(27.3)	18(34.6)	15(51.7)
	Interpersonal Relationship	13(13.1)	5(9.6)	3(10.3)
	Functional	50(50.5)	24(46.2)	10(34.5)
	Others	9(9.1)	5(9.6)	1(3.5)
Result		N= 99	N=38	N=32
	Cognitive	8(8.1)	4(10.5)	3(9.4)
	Behavioral	18(18.2)	6(15.8)	6(18.8)
	Health	64(64.6)	27(71.1)	22(68.7)
	Psychological	9(9.1)	1(2.6)	1(3.1)

N= total number of criteria; n= number and proportion of criteria voted on by participants.

Table 2 - Consensus Criteria obtained and voted by experts from Portugal and Brazil in Delphi Panel

Consensus Criteria %		Portugal		Brazil		*Consensus	Rationale
		%	†Mean	%	†Mean		
Structure	Human resources with specific training: doctors and nurses trained in Travel Medicine; qualified administrative staff in the reception, delivery and administration.	95.5	6.8	75.0	6.3	yes	Scope of competencies expected of travel medicine practitioners. Combinations of knowledge, skills and attitudes in professional performance within a given organizational context.
	Access to updated information online about epidemics, outbreaks, events in different countries, interactive maps and clinical procedures.	54.5	4.6	100	4.7	yes	Access to the standards in a broad, agile manner, allowing the constant updating of knowledge regarding possible changes in the pattern of transmission and geographical distribution of infectious diseases.
Process	Consensus guidelines creation with various members of the team, for the standardization procedure.	81.8	5.8	-	-	no	A structured and sequenced approach is the most efficient way for the physician and other clinicians to address the necessary preventive and educational interventions.
	Medical consultation considering relevant personal history, previous diseases, vaccines taken, destination, travel context, previous trips, future trips.	63.6	4.6	100.0	5.7	yes	Capacity of decision-making based both on the evaluation of travel Itineraries/ risk assessment and on the personal history. Relevance of an individualized approach to assess risk and to support adequate pre-travel advice.
	The possibility of vaccination immediately following consultation.	81.8	4.4	-	-	no	Travelers should be up to date with routine vaccinations in addition to those needed for international travel.
Result	Degree of compliance of the traveler to the measures that have been proposed and recommended	81.8	5.7	-	-	no	The adoption of preventive measures and adherence to the recommended treatment .
	Assessment of the degree of satisfaction.	77.3	4.1	-	-	no	The extent to which the patients/ enrollees, perceive if their needs were met.
	Early identification of signs and symptoms of health problems related to travel.	-	-	100.0	4.0	no	Post-travel management of diseases potentially related to travel regarding individual care and public health concern.

† Mean obtained from the scores attributed to each dimension by experts *Consensus between Brazilian and Portuguese experts

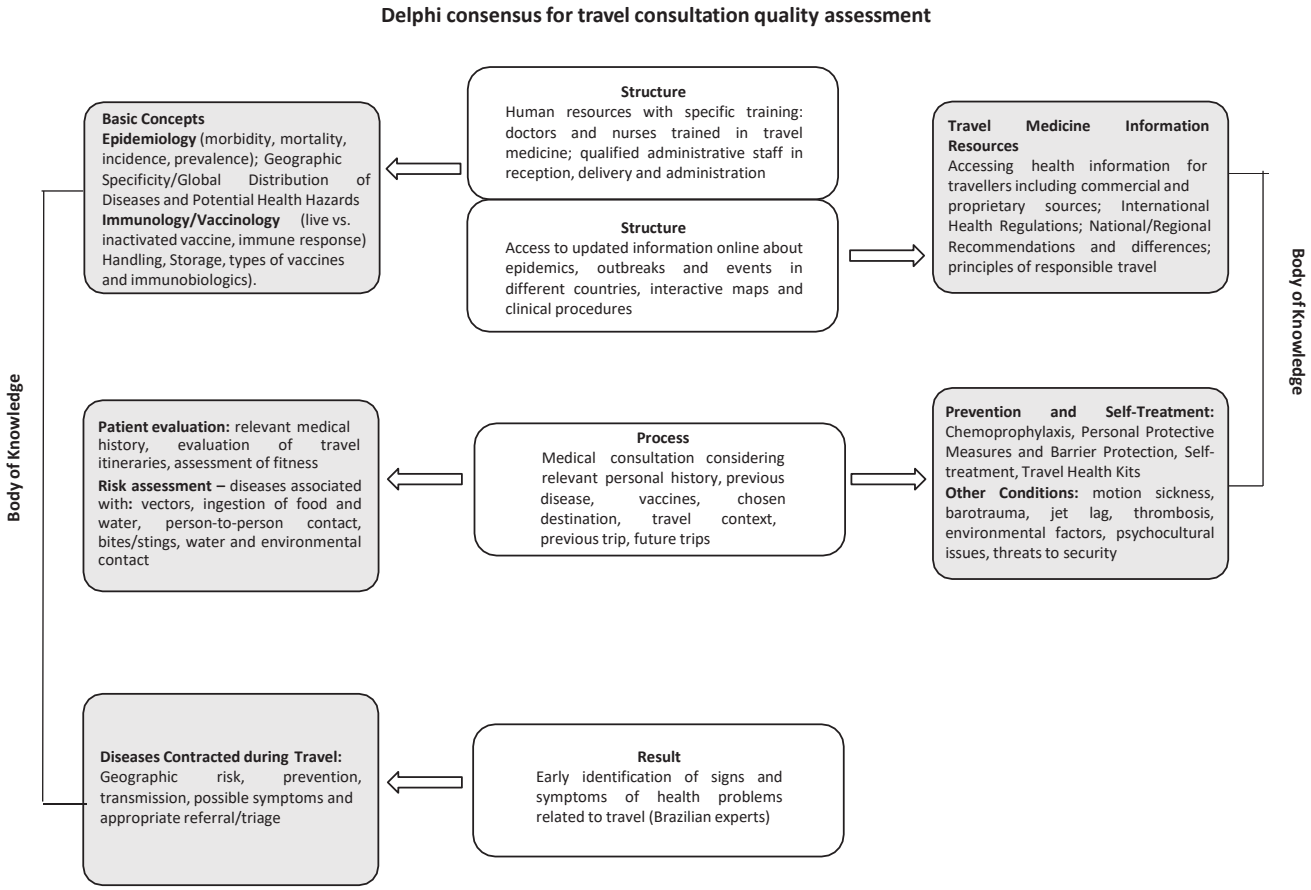
countries assessing the quality of travel medicine consultations are presented here in a model elaborated on the basis of criteria presented in the report "Body of Knowledge for the Practice of Travel Medicine", which describes the scope and extent of knowledge required in the field (Figure 2).

Discussion

Quality assessment is of utmost importance for the practice of travel medicine and should be based on validated recommendations and fair, reliable and consensual standards. Both in Portugal and Brazil, travel medicine practice has been organized in accordance with international standards and national recommendations on immunization and preventive measures. As the body of knowledge develops in these countries it is essential to uphold and monitor validated consensual criteria to assess quality in pre-travel advice. We intended to assess experts' opinions about quality criteria in travel medicine consultations and to perform a comparative analysis, respecting the differences in terms of context, to establish the most relevant criteria to be considered regarding transit between Portuguese-speaking countries.

Our results highlight the importance of qualified human resources with specific training, including health care

Figure 2 - Quality of pre-travel consultations



providers and administrative staff, in accordance with the findings of other authors [10,31]. It confirms the need for both the expansion of human resources training and skill enhancement, as well as the recognition of travel medicine as a medical specialty. Together with increasing compliance and the maintenance of standards, monitoring and improving training levels, where needed, would also contribute to raising confidence levels among health professionals in the sector. Assessments of travel related counselling by GP's, nurses and pharmacists indicate that staff generally requires additional training in travel medicine, risk assessment and risk communication [10, 32]. An international survey showed that in certain developed countries nurses can independently advise and prescribe/administer vaccines and anti-malarial medication under the guidance of a Patient Group Direction (PGD) or a protocol [33]. Another consensual criterium of our panel was the importance of having access to updated information online. Considering the broader access of the public to information via web-based resources, it is imperative that professionals provide timely, qualified and accurate information to travelers, thereby avoiding possible misunderstandings and faulty procedures. The website TravelHealthPro, launched by NaTHNaC in 2015 is an example of a digital resource focused on providing regularly updated travel information and recommendations online, designed for both travelers and professionals [34].

Consensual procedures among members of the team, as well as medical consultations which consider patients' personal history, were process criteria which resulted from the panel. Good quality pre-travel advice can be achieved by the following procedures: (1) standardized consensual procedures and adoption of a structured approach to pre-travel consultations; (2) individualized risk assessments; and (3) immediate access to recommended immunization. The best available risk data should support professionals' decision making, whereas compliance with the recommended measures will largely depend on travelers' risk perception. It also applies to VFR, a group associated with increased risks, thus in need of heightened attention regarding the definition of criteria and variables for risk assessment to reduce or even preempt the probability of adverse outcomes [9]. Determinants of health both at individual and population level should therefore be considered in this respect [35]. A survey among European experts ad-

vising VFR travelers on malaria chemoprophylaxis, using the Delphi method, revealed insufficient consensus in more than half of the scenarios presented in the study [36, 37]. A good balance between standardized procedures and individual risk assessment can be achieved by an experienced professional with an adequate professional-traveler relationship.

Some authors have addressed the technical and scientific quality of advice to travelers [10, 38, 39] comparing counseling to national standards issued by recognized bodies and those issued by the WHO. The establishment of national supervisory bodies such as NaTHNaC and the direct involvement of academic institutions, served as an important incentive for the study of the organisation and standards of service delivery in the UK, assessing quality levels, staff skills and quality of training and the provision of epidemiological information [31]. Overall, these studies asserted the need for establishing clear guidelines and assess the quality of the knowledge base provided for and held by travelers on a regular basis. It is relevant and necessary to review those results in the light of current knowledge and expanding access to information through different media platforms in a global setting of intense and rapid human mobility. Over the last decade, the role of social media with regard to health and travel has greatly expanded, raising concerns over the quality and reliability of information disseminated via these platforms [40]. Ongoing evaluation of travel medical practice and training has resulted in recommendations for the improvement of guidelines, monitoring methods and facilities, the setting of standards and their uniform application in the UK [41], but internationally recognised professional standards are yet to be defined. Owing to the establishment of international guidelines for yellow fever vaccination centers (YFVCs) by WHO, the verification of standards and quality control has largely focused upon this aspect of immunization.

The degree of compliance with the recommendations proposed and the degree of satisfaction of travelers following pre-travel advice emerged as consensual criteria in the assessments made by Portuguese specialists. The following procedures could be implemented to achieve a more accurate assessment of travelers' degree of satisfaction: questionnaires should be filled routinely after consultation, while phone-based enquiries could be employed to assess compliance with the recommended measures after the trip and post-travel consultations. Degree of compliance with malaria chemoprophylaxis may serve as an example to determine relevant issues associated with travelers' risk perceptions, fear for potential side effects and poor compliance after returning home [42, 43]. Qualified professionals, who are familiar with the epidemiology of malaria at travel destinations, travelers' clinical conditions and possible degree of exposure to mosquito bites may enhance compliance.

The criteria for the evaluation of the results of travel medicine consultation obtained by consensus were different in the two expert groups, possibly reflecting different professional and institutional contexts. In Portugal travel medicine consultations at IVC comprise travel advice and vaccination; post-travel consultations for sick patients are performed in emergency services at public or private hospitals, whilst in Brazil post-travel consultations are provided either by travel medicine services or other private and public health facilities. The availability of those consultations could ensure the timely identification of suspect signs and symptoms associated with travel and enable appropriate interventions with respect to the travelers' health and in the realm of public health.

Our proposed model integrates the consensual quality criteria obtained in our study with the recommendations and good practices for pre-travel advice based upon the "Body of knowledge for the practice of travel medicine" [15]. It highlights the key points in the practice and their correspondence to the scientific evidence which supports the norms. As a relatively new field of knowledge encompassing different professional profiles, the discussion of practice in the light of standards seems relevant. Structure and process consensual criteria constituted essential aspects of quality assessment, integrating practice and evidence-based issues. Regarding the "outcome dimension" we decided to include Brazilian experts' consensual criteria in the model since they refer to post-travel management, which is not a regular practice among the Portuguese specialists interviewed. The application of quality enhancing criteria could contribute to improving the balance between normative procedures and a personalized approach.

A limitation of the study was the number of Brazilian experts available for the panel, whereas Portuguese specialists actively participated, probably as a result of a more consolidated specialist network in Portugal.

Conclusions

The present Delphi consensus study aimed to arrive at consensual criteria based upon Donabedian's model for

quality assessment regarding the dimensions of structure, process and outcomes of pre-travel consultations among specialists in Portugal and Brazil. The results underline that priority should be given to qualified human resources and their monitoring; the need for regular refresher training for professionals in travel medicine, ready access to up to date information for professionals and travelers; consensual procedures for health professionals; the inclusion of personal histories in medical consultations; and the timely assessment of signs and symptoms related to travel. Rapid epidemiological shifts due to emerging and re-emerging infectious diseases and increasing population mobility, raise the urgency of introducing common and consensual standards regarding the quality of consultations, improved communication and knowledge exchange, and the monitoring of compliance, thereby enhancing compliance and prevention. The cases of Portugal and Brazil discussed here, where travel medicine has rapidly developed over the past decades, illustrate the need for further comparative research on the quality of pre- as well as post-travel consultations.

Authors contributions
MDW and RMFT designed the study. MDW conducted the Delphi consensus and the study's statistical analyses. MDW, PJH, ZH and RMFT drafted the manuscript and all authors contributed to its contents.

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Competing interests: none declared.

Ethical approval
The study protocol was approved by the ethics committee of the Instituto Nacional de Infectologia Evandro Chagas/Fundação Oswaldo Cruz and the Instituto de Higiene e Medicina Tropical/Universidade Nova de Lisboa (Research Protocol 42204815.2.0000.5262; 09-2015-PD).

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