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*Programme for the Assessment and Control of  
Pollution in the Mediterranean Region  
(MED POL Phase IV)*

## *MEETING ON HEALTH RISKS ASSOCIATED WITH TOURIST ESTABLISHMENTS IN THE MEDITERRANEAN*

Report on a joint WHO/UNEP Meeting

Athens, Greece  
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## ABSTRACT

The Mediterranean coastal areas, where the sea provides the main recreational amenity, constitute one of the most popular tourist destinations. Tourism is very important to the economy of most Mediterranean countries, but its impact on the physical and social environment may also have consequences for the health and well-being on both tourists and local population. In particular, since tourists spend most of their time in tourist establishments, there is a need to identify the environmental health risks associated with them that pose a threat to human health. WHO/EURO in the framework of the MED POL Programme Phase IV, held a consultation meeting to assess the major health risks associated with tourist establishments and to formulate a proposal for a plan of action to tackle health risks along with suggestions for further action. Thirteen experts from a wide range of Contracting Parties, reviewed a working document related to the assessment, prevention and control of health risks in tourist establishments in the Mediterranean, and finalized their prioritization along with conclusions and recommendations for the preparation of an action plan to address the issue.

### Keywords

HEALTH RISKS  
TOURIST ESTABLISHMENTS  
ENVIRONMENTAL EXPOSURE  
MEDITERRANEAN  
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## Foreword

Due to serious concern regarding pollution in the Mediterranean sea, the countries of the Mediterranean signed and adopted the Convention for the Protection of the Mediterranean Sea against Pollution in February 1976. In order to broaden the concerned areas, in June 1995 the title of the Convention was amended to Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean. Of particular importance is the legal component, which comprises *inter alia* the amended Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities, while the MED POL Programme is responsible for its implementation.

In view of the recognized role of the Programme and its important contribution to the over all objectives of MAP, the Contracting Parties to the Barcelona Convention decided that the MED POL Programme should continue throughout a new phase (2006-2013) and that it should go through the objectives and requirements of the amended Convention and Protocols, the need to substantially contribute to the process of achieving sustainable development, and keeping into account and harmonizing the new Phase IV with on-going regional and international programmes and initiatives.

The Mediterranean itself, where the sea provides the main recreational amenity both for local populations and the millions of tourists who visit the area annually, constitutes the receiving body of all the wastes that are generated in the coastal areas, is seriously threatened. It is to be noted that among the overall objectives of the MED POL Programme Phase IV are included, the assessment of all point and diffuse sources and load of pollution reaching the Mediterranean, and the magnitude of the problems caused by the effects of contaminants on living and non-living resources, including human health, as well as on amenities and uses of the marine and coastal regions.

Pursuant to the objectives of the MED POL Phase IV Programme and the connection to the protection of human health and in particular to the assessment of health risks associated with tourist establishments and facilities in the Mediterranean coasts, there is a need to identify the major health risks and consequently analyse them with the view to prepare in due time an action plan to further reduce and eventually eliminate them.

### 1. Opening of the Meeting

The meeting took place at the premises of the Coordinating Unit for the Mediterranean Action Plan, Athens, Greece. It was attended by thirteen experts, who acted as temporary advisors, a representative of the World Tourism Organization and one representative from UNEP/MED POL. A list of participants is attached as Annex I to this report. Dr. George Kamizoulis, WHO Senior Scientist at the MED POL Programme, welcomed the participants on behalf of Mr Paul Mifsud, Coordinator, Mediterranean Action Plan and Dr. Marc Danzon, Regional Director, WHO Regional Office for Europe.

Consequently, the participants were given a framework for work of the Mediterranean Action Plan and of the MED POL Programme, involving health problems associated with tourist establishments. It was noted that the Working Document prepared in advance of the meeting and the present Meeting to prepare this report were undertaken in support of Mediterranean Action Plan (MAP) activities in action-oriented co-operative efforts involving 21 countries bordering the Mediterranean Sea, and the European Union (EU), as well as many other concerned partners, with respect for the backdrop of developmental, economic, political and religious differences in shared efforts for sustainable development. Also, the prevention of pollution from land-based sources, linked primarily to population pressures, urban growth, industrial and agricultural development and issues surrounding urban development, rural area and coastal zone management, water, energy, transport and

tourism, are among the most concerned activities in the Mediterranean. Recognizing that “65% of the Mediterranean coast is occupied by people and there is a pressure of about 6,000 residents and tourists per each square kilometer of the coast” (Medwaves, Issue 50; 2003, p.10), then the effects of mass tourism on extensive occupation of land surfaces, contribute to increased pressure on water resources, greater pollution and to the generation of waste, and leading to the loss of habitats for many wildlife species, the abandonment of traditional activities such as fishing and agriculture, and a deterioration in cultural values.

The objectives of the Mediterranean Strategy for Sustainable Development that includes the need to promote sustainable tourism, which in turn reinforces social cohesion and cultural and economic development and strengthens synergies with other economic sectors, are also to be taken into consideration, so as to improve cooperation mechanisms between tourism and environmental authorities and strengthen the capacities of local authorities to manage the development of tourism.

With respect to the needs of 150 million people living on or near the 46,000 Kms of Mediterranean coastline and the needs and expectations of some 200 million tourists arriving in the Mediterranean region every year, remedial steps are being taken for the long-standing stress to the Mediterranean marine environment as a result of human activity.

## **2. Adoption of the Agenda**

The Provisional Agenda was presented and adopted (Annex II).

## **3. Scope and Purpose of the Meeting**

Participants identified that a common vision on sustainable development is recognised in the Mediterranean region and that in it there is a great diversity of cultures, religious and ethnic identities, some of them feeling marginalised or excluded by globalization and modern consumption and production patterns and that it is urgent to take actions to dispel these feelings. Sustainable development consists of recognizing and protecting diversity without endangering the cohesion of the whole society and the unity of the State. Moreover, it is essential to move from a centralized decision-making process to negotiation, cooperation, concerted action and decentralization (Medwaves, Issue 50, 2003; p.8-9). Key challenges of the Mediterranean Strategy for Sustainable Development include “poverty, entrepreneurship, cultural diversity, governance and peace” (Medwaves, 30<sup>th</sup> Anniversary Issue 52/53; p.9).

The participants were therefore mindful of the complementary needs to consider all countries bordering on the Mediterranean as one area, to develop a health-based action plan that is supportive of individual country needs and to consider tourist establishments as comprising built and natural environments and inclusive of all areas where established tourist-based activities take place

Participants were reminded of their role in the workshop to help identify health risks in tourist establishments in the Mediterranean Region primarily linked with the environment and strategies for their improved prevention and control as being in the context of the Mediterranean Strategy for Sustainable Development (Medwaves, Issue 55; March 2006; 12-13). This strategy has four objectives:

- a) contribute to economic development by enhancing Mediterranean assets;
- b) reduce social disparities by implementing the Millennium development Goals and strengthen cultural identities;
- c) change unsustainable production and consumption patterns and ensure the sustainable management of natural resources; and

- d) improve governance at the local, national and regional levels and include among its priorities “sustainable tourism as a leading economic sector”.

In these contexts, participants reminded themselves that the World Health Organisation (WHO) definition of environmental health is very broad and that it would not be possible for the Mediterranean Action Plan to include all the potential factors. This definition of environmental health reports that: “environmental health comprises those aspects of human health and disease that are determined by factors in the environment. It also refers to the theory and practice of assessing and controlling factors in the environment that can potentially affect health”. Therefore, within the context of the Barcelona Convention and the MED POL Programme, the health risks to be identified should be strictly related with the environmental factors at sea and in the coastal areas.

The objectives of the meeting, which was convened by WHO/MED POL in joint collaboration with UNEP within the context of the Mediterranean Action Plan, were to assess the conditions regarding the:

- a) assessment of the major health risks issues associated with tourist establishments;
- b) identification of those health risks issues that are prevailing in tourist establishments and facilities in the Mediterranean coastal region;
- c) proposals for prioritization of health risk as described above;
- d) formulation of a plan of action to tackle health risks and to reduce the burden of disease related to these;
- e) suggestion for further actions which can include activities related to exchange of information, existing legislation, and capacity building.

#### **4. Election of Officers**

Dr. Robin Philipp from the Centre for Health in Employment and the Environment in Bristol, U.K., was nominated by the Meeting as Facilitator and Rapporteur, and Dr. George Kamizoulis, as Coordinator of the Meeting.

#### **5. Presentation of the working document on the assessment, prevention and control of health risks in tourist establishments in the Mediterranean**

Participants noted that headings and topics included in the background document had been selected in a multidisciplinary brainstorming exercise involving an Occupational and Public Health Physician (Robin Philipp), a Research Psychologist (Pam Thorne), and the WHO Senior Scientist of the Coordinating Unit for the Mediterranean Action Plan (George Kamizoulis). The participants undertook a thorough review of the document. Where necessary, the detailed wording was amended. Some additional points were also added.

In undertaking this work participants were aware that for the Mediterranean Region an attempt had been made in the Background Document to address five main questions: (1) how serious are the different health problems in the Mediterranean Region in terms of the likelihood of death, disability, disease, discomfort and / or dissatisfaction?, (2) how many people are likely to be affected with the different health problems during a year in different countries and regions within the Mediterranean? (Disease incidence), (3) to what extent are different interventions technically feasible and likely to relieve or prevent the different

problems? (4) what do analyses show for benefits obtained from the different risks, adverse effects of them, and the cost implications for different systems of hazard control? (5) to what extent are the local communities likely to accept or adopt the different interventions, behaviour or other changes required?

It was identified both in the preparation of the Background Document and by participants at the meeting that there is insufficient published information for adequate assessments of the health risks for different environmental health problems affecting tourists and resident populations in the Mediterranean Region and for the effectiveness of present control and prevention measures. Comprehensive surveillance systems are needed for this purpose. Nevertheless, participants agreed that the Working Document, with their amendments included, now provides a practical basis for exploring ways of further helping to meet apparent unmet tourist health needs within the Mediterranean Region.

Participants also identified some additional environmental health topics, not in the Background Document, that do too need to be considered in the assessment of health risks and their control and prevention in the context of the work of the Mediterranean Action Plan. These are:

- The health problems associated with rickettsiosis, amoebiasis and other communicable diseases and that tourism, public health and environmental protection professionals are likely to need appropriate information for them, based on other, published, detailed WHO resource material;
- The need for much more organic wastes from tourist establishments to be composted on site, so as to reduce the risks of health problems being spread by birds, rodents and insects;
- The need for appropriate methods of solid waste disposal such as sanitary landfills and the avoidance of open burning of wastes

In considering the breadth of environmental health problems arising from these additional health risks for tourists and residential populations, participants were very concerned to learn (Medwaves; Issue 52; p.12), that the generation of solid waste in the Mediterranean region is estimated to be, on average, 254 kg per person per year, with an annual growth of 2-3%, and that in the Mediterranean Sea, plastic alone accounts for 75% of the waste on the sea surface and the seabed, and that some 30-50% of the 30-40 million tonnes of municipal solid waste of coastal origin generated annually could reach the Mediterranean Sea from illegal dumping sites.

From this example, participants agreed that the problems for tourist health and environmental quality are interdependent, important and in urgent need of being adequately managed and controlled.

In addition, the participants decided to take into consideration the following elements that should be also integrated in the finalization of the working document:

- Definition of tourist establishments;
- In dealing with every environmental health risk factor, it should be taken into account wherever appropriate the impact: (a) on residual population; (b) on/from domestic tourism; (c) on/from international tourism; (d) on different age groups: elderly people for international tourism, children for domestic tourism and teenagers for international tourism; and (e) from mass movement or displacement of people.

The Background Document and the proposed activities including general technical guidance should be addressed to and become available for: decision makers, local level including local government, authorities (public health, environment, transportation, etc.) and stakeholders in the tourist industry.

In addition there should also be involvement by academic and public health institutions, voluntary organizations, consumer organisations, tour operators, labour unions and other concerned entities. Participants of the meeting noted that the health risks and benefits of tourism are best considered as an ecosystem. An integrated ecological approach is therefore needed.

## **6. Prioritization of health risks associated with tourist establishments in the Mediterranean coastal areas**

The participants decided to use for prioritization purposes the second alternative method proposed in the working document. Therefore, a questionnaire was developed containing all the health issues mentioned. As a result, the participants were requested to identify health and well-being topics in tourist establishments that they think should have priority for further consideration in the Mediterranean region. For each topic, and using the score system, the participants were invited to evaluate them under three headings, i.e. "Frequency", "Complexity", and "Concern/Consequences". For ease of understanding, 'Frequency' means "how often do I come across issues associated with the topic", 'Complexity' is understood as the "difficulty to deal with this issue", and 'Concern/Consequences' stands for "if we get it 'wrong', is this a big problem" ? By using the following scale participants scored each of the proposed topics.

Frequency	1 = not often	2 = average	3 = often
Complexity	1 = straightforward	2 = average	3 = complicated
Concern	1 = not a worry	2 = some problems	3 = major consequences

Scores given separately for each topic on the individual questionnaires, and for each of the three headings: "Frequency" "Complexity" and "Concern", were added up. These total scores on the individual questionnaires given for each topic were in turn multiplied by the "Concern/Consequences" score on each questionnaire to give a final score for each topic on the individual questionnaires. The results were then summed up separately for each topic and by adding the scores of each of the participants. Then the topics were placed in rank order; the highest scoring topic was ranked with the highest priority and the lowest with the lowest priority (See Annex III for the list of topics in order of their identified priority).

The findings were of assistance in identifying areas where participants considered for example that: (i) problems have been identified that need sorting out; (ii) there is an unmet need for new educational and training materials; (iii) the quality of preventive and control services could be improved; and (iv) local and/or national standards or guidelines exist and against which there is a need to assess the effectiveness of risk assessment, monitoring, control and prevention.

Participants concluded that the topics listed by priority in Appendix III could become the basis for further locally informed discussion in different tourist establishment areas.

## **7. Formulation of an action plan to reduce burden of disease in tourist establishments in Mediterranean coastal areas**

The participants, following the prioritization exercise and its results, agreed that an action plan based on the priorities and including a set of supporting activities, should be



formulated and prepared. The most important issues to be included in the action plan are the following:

- Preparation of basic information on environmental factors and their implication to health, particularly to tourists' health, and the impact on different age groups, if possible. Guidance could be provided from the amended working document.
- The basic information will be prepared according to the prioritization process and results, so as to start with the most important issues in 2008 and complete the task in 2010. It will be addressed to local authorities, tourist authorities, and hotel operators.
- An award scheme based on indicators that identify the absence or low potential of environmental health risk in tourist establishments, should be developed.
- Capacity building programmes, either at university level or at local level should be established, including training of officials of the local and or tourist authorities and industry, and hotel operators.
- Prior to the operation of the action plan, all above activities should be tested at national level in a well supported environment, with public health, tourist and environment authorities working closely, so as to have appropriate results available at the latest in the year 2009.
- The final and detailed action plan should be formulated and in place, taking into account all the above mentioned points by 2010.

## **8. Legislation, exchange of information and capacity building**

Following an extensive discussion among the participants, key issues identified in this agenda item, are related to exchange of information and capacity building. Therefore, improved networking for health risks assessment, the exchange of information, and the development of education and training materials and relevant courses is needed among all stakeholders for health and tourist establishments in the Mediterranean Region. Emerging systems in Information and Communication Technology (ICT) have much to offer.

Examples include: (a) the Safer Project, ([www.saferproject.net](http://www.saferproject.net)), a 6<sup>th</sup> framework Programme Project of the EU for an early warning system for earthquakes in Europe and in particular focussing on the seismic risk of European countries around the Mediterranean Sea; (b) the Transfer Project ([www.transferproject.eu](http://www.transferproject.eu)), a 6<sup>th</sup> Framework EU Project Programme of tsunami risk vulnerability and improved understanding and risk assessment strategy for an appropriate early warning system in the Euro-Mediterranean Region; (c) the European Mediterranean Disaster Information Network ([www.eu-medin.org](http://www.eu-medin.org)) to encourage coordinated and increased access to data and expert know-how before, during, and after a disaster strikes; and (d) an EU project, the Network for Communicable Disease Control in Southern Europe and Mediterranean Countries for an epidemiological surveillance in the Mediterranean, ([www.episouth.org](http://www.episouth.org)). Further information about steps that could be taken with new ICT techniques for improved health risks assessment, management and control in the Mediterranean Region are available in a new book: "*Technology and Communication For A New Humanitarian Intervention: Experimenting Cholera Café*; Eds. L.E. Pacifici and F. Riccardo; In Press; Franco Angeli, Italy, 2007". In the EU, the rapid Alert System for Food and Feed (RASFF), has been established under Regulation (EC) No. 178/2002, as a network which involves Member States, the European Commission, and the European Food Safety Authority (EFSA).

In addition, a relevant capacity building programme should be developed. The most important point to be considered is for the health issues to be identified and dealt with. It is proposed to include the following driving forces as they are related to the possibility of health risks: (a) the quality of drinking water in tourist establishments, (b) food hazards, (c) sewage disposal and irrigation with effluents, (d) management of solid wastes, (e) quality of bathing waters and beaches including their access paths and roads and swimming pools, (f) air

pollution including indoor air, (g) noise in tourist establishments, (h) radiation and sun UV risks, (j) vectors (mosquitos, flies, rats), (k) hazardous chemicals and pesticides, (l) building hygiene, and (m) watercraft and boating sanitation.

Some participants were of the opinion that the example of the WHO training material on drinking water-related issues could be used and they considered that internet based training material would be of major assistance to those interested in this and related subjects.

According to the experience of participants, it was also mentioned that it could be worthwhile to develop additional health-relevant training material for university courses, particularly for health risks in tourist establishments, and/or to help strengthen already existing material and courses. Particular interest was identified in the production of training material, which would form the basis of useful background information for a regional training course, where national trainers would be invited to attend and be trained, in order to conduct later on national training courses in their respective countries.

## 9. Conclusions and Recommendations

Participants agreed the following activities and steps needed to implement an Action Plan:

- Wording of the Working Document prepared for the Athens Meeting, 24-26 April, 2007, is being finalised so that, in support of the public health, it can be presented to the planned Meeting of MED POL National Co-ordinators in late June 2007.
- This Report of the Athens Meeting, 24-26 April, 2007, is being finalised as a Principal Paper for the planned Meeting of MED POL National Co-ordinators in late June, 2007. It includes: (a) key points from discussion at the Athens Meeting, 24-26 April, 2007; (b) the methodology and findings of an audit tool used by participants of the same meeting, to identify their perceived priorities of topics in need of further research or audit, and / or the development of appropriate education or training materials for public health and / or tourism professionals or consumers of tourism; (c) recommendations for capacity building that will help to meet the health needs of international and domestic tourism.
- The key stakeholder market was identified for material in the Working Document and the Meeting Report. It includes: (i) National Co-ordinators of the MED POL Programme; (ii) Organisers of Academic Courses in Tourism Studies and Environmental Health Studies; and (iii) Public Health, Environment and Tourist Authorities. Marketing of the Working Document and Meeting Report needs to address their relevance for health-pertinent issues such as needs assessment, quality, cost-competitiveness, sustainability in trade and industry development, safety and security.
- From the priorities identified by participants of the Athens Meeting, 24-26 April, 2007, actions are being explored for what the Mediterranean Action Plan needs to implement in on-going work and what priorities should be given to the different tasks.
- To help attract tourist visitors the WHO Healthy Settings model can be used to help establish and further strengthen local Award Schemes, and an indicators-based Award Scheme for healthy tourist resorts and other tourist destinations. It could provide an incentive to help extend the standards of environmental health and develop the concept of 'healthy tourism' and could draw on experience of the Blue Flag scheme of the Foundation for Environmental Education in Europe, WHO work in Europe with the Children's Health Action Programme and Environmental Health Indicators, and activities of the WHO Healthy Cities programme.

- It is proposed that the draft guidance developed with participants of the meeting should be tested in a pilot scheme and audited in one, preferably relatively small Mediterranean country that has the capacity for enhanced co-operation through a well-developed public health infrastructure. The Maltese experts have offered to explore the possibility of running the pilot project. The pilot scheme would explore uses of the material to help meet needs of key stakeholders for the health, well-being, safety and security of tourists from abroad, other visitor populations including domestic tourism, and residential populations. Core materials for discussion with the principal stakeholders and for their comment and formal audit include: (a) a booklet on tourism as an ecosystem (i.e. pages 1 – 9 of the Working Document prepared for the Athens Meeting, 24-26 April, 2007), together with additional relevant material of the World Tourism Organisation and major organisations in the travel industry, (b) a review of the principal environmental factors associated with different tourist health problems in that country of the Mediterranean, including key points in the prevention and control of these health problems (i.e. pages 9 – 63 of the Working Document), (c) an aide memoire toolbox / booklet of practical approaches to help tourism, public health and environmental protection managers assess and manage the impacts of tourism including for example, how to identify health hazards in the environment, factors to be considered in undertaking risk assessments of them, and when, how and what expertise to access if needs be in dealing with them, with brief examples of the sorts of public health problems that can arise such as with algal blooms, carbon monoxide poisoning, Legionnaires disease, exposure to cement dust on building sites and avian flu) (i.e. pages 63-79 of the Working Document) together with additional, practical, informative public health education and training materials such as those of the WHO and World Bank, and including definitions and advice about action research (described in published literature as participatory, democratic, empowering and contributing to social science and social change – and thereby contributing to the development of social capital and strengthening of cultural capital).
- A pilot scheme for introducing the materials described above, and for undertaking a detailed audit of their use and worth needs to be developed.
- A capacity building programme should be further developed to include all the points raised above in Agenda Item 8. The participant from Slovenia volunteered to contribute material and help draft a proposal on which university and/or other educational institution courses could be based. His offer was welcomed by the meeting.
- Further exploration of all the possibilities and the use of web-based information is needed so as to provide a full and detailed picture of the situation in the Mediterranean region. Ways and means of exploring the best methods for the exchange of this information is needed, as is indicated in Agenda Item 8.
- When developing projects for new touristic areas, it is advisable to carry out comprehensive, detailed health risks impact assessments to guarantee the minimum risk to human health. However, compliance and enforcement issues are better addressed at national or global level.
- Preliminary work in the above areas needs to be developed by the MED POL Programme, together with the World Tourism Organisation and European Consumer Centre, to (a) develop guidelines on environmental protection for tourists; and (b) establish public quality standards to be used as references for consumer protection and better enable actions by the tourist industry to be competitive.

## **10. Closure of the Meeting**

In officially closing the meeting, Mr. F. Saverio Civili, MED POL Coordinator, greeted the participants and gave a brief description of the objectives at the MED POL Programme by highlighting the importance of the Protocol for the Protection of the Mediterranean sea from Land-based sources and activities (LBS). He also referred to the Strategic Action Programme (SAP) for the implementation of the LBS Protocol, as the key tool to decrease the level of pollution in the Mediterranean and to apply the sustainable development principles. While he provided extensive information on the SAP, he emphasized on the importance of health risks in coastal recreational areas in the Mediterranean, as these are very significant of the touristic industry of the region.

Dr. Kamizoulis thanked the participants for their work during the proceedings and for their positive and constructive comments and suggestions on the working document and during the discussions, and he formally closed the meeting.

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## **ANNEX II**

### **AGENDA OF THE MEETING**

- |                       |  |
|-----------------------|--|
| <b>Agenda item 1.</b> | Opening of the meeting   |
| <b>Agenda item 2.</b> | Adoption of the Agenda   |
| <b>Agenda item 3.</b> | Scope and purpose of the Meeting   |
| <b>Agenda item 4.</b> | Election of Officers and organization of work  |
| <b>Agenda item 5.</b> | Identification of health risks associated with tourist establishments in the Mediterranean coastal areas             |
| <b>Agenda item 6.</b> | Prioritization of health risks as described above  |
| <b>Agenda item 7.</b> | Formulation of a plan of action to reduce burden of disease in tourist establishments in Mediterranean coastal areas |
| <b>Agenda item 8.</b> | Legislation, exchange of information, capacity building  |
| <b>Agenda item 9</b>  | Conclusions and recommendations  |
| <b>Agenda item 10</b> | Closure of the Meeting   |



### ANNEX III

#### TOPICS IDENTIFIED BY PRIORITY ORDER

1. Food safety
2. Food-borne diseases
3. Water treatment
4. Sewerage treatment
5. Noise pollution
6. Avian (Bird) flu
7. Litter
8. Solid wastes
9. Biological contaminants
10. Sun and heat
11. Aesthetic quality of environment
12. Legionellosis
13. SARS
14. Seafood contamination
15. Natural disasters
16. Recreational water quality
17. Sexually transmitted diseases
18. Outdoor air pollution
19. Eutrophication / algae
20. Hotel safety standards
21. Blood-borne diseases
22. Hazards of water sports
23. Vector-borne diseases
24. Bathing beach debris
25. Zoonoses (animal borne)
26. Environ. Tobacco smoke
27. Carbon monoxide
28. Cruise ships health & safety
29. Poliomyelitis
30. Tuberculosis
31. Marine debris
32. Giardiasis
33. Meningococcal disease
34. Cryptosporidiosis
35. Poor air conditioning
36. Fairground safety
37. Sand quality
38. Toxic respirable matter
39. Treated bottled water
40. Hazards of beach equipment
41. Sick building syndrome