SYLLABUS

Management of Travel-related Diseases

4th edition · 2027 · Travel Medicine and Health in Mobile Populations training program

Key information

Dates: 18 Jan – 5 Mar 2027 (Monday 18 January to Friday 5 March)

Student dedication: 100 hours (7 weeks · approx. 14 h/week)

Credits: 4 ECTS

Modality: Online · asynchronous

Team

Course Director: Natalia Rodríguez Valero

Faculty Coordinator: Daniel Camprubí Ferrer

Course Coordinator & Facilitator: Pedro Laynez Roldán

Faculty: José Muñoz Gutiérrez, Alex Almuedo Riera, Natalia Rodríguez Valero, Daniel Camprubí Ferrer, Alba María Antequera, Pedro Laynez Roldán, Izar Blázquez, Elena Sendra

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Instructional design & support: Education & Training Team, ISGlobal

About the course

Description: This course covers the clinical evaluation of travelers and migrants, focusing on accurate diagnosis and the management of common diseases. It also explores treatment options based on the latest scientific updates.

Learning objective: Implement the diagnosis and management recommendations of the main clinical presentations of migrants, refugees and returning travelers.

Evaluation

The final grade will take into account participation in forums, completion of interactive materials, and end-of-unit assessments. It will be calculated as follows:

- **15%** **Forum participation**: at least 3 contributions required
- **25%** **Interactive materials**: completion of essential materials is required
- **60%** **End-of-unit assessments**: written case scenarios combining open and multiple-choice questions on the practical diagnosis and management of the main clinical presentations

Resit: Students who do not achieve a passing grade on the end-of-course assessment will have the chance to complete an alternative activity. The resit must be completed and delivered within a maximum of two weeks (guidelines and terms will be specified by the course coordinators).

Course organisation

The sessions are organised as follows:

Key course information and resources

- Video: How to use the virtual platform
- Teacher's speaker
- Discussions
- Schedule
- Syllabus
- Main resources

1. What should be considered in the initial evaluation of returning travelers and migrants?

Specific learning objectives:

- *Apply the specific recommendations in the initial approach of returning travelers and migrants, including the travel itinerary, the risk exposures assessment and the particularities of the physical examination*
- *Recognize the situations in which an infection by a high transmission pathogen should be suspected, based on epidemiological and clinical factors*

Learning materials:

- **Video lesson #1 (recording):** Travel medicine in the context of the European healthcare model
- **Lecture notes:** Initial assessment of returning traveler and migrant
- **Interactive lesson:** Initial assessment of returning travelers and migrants: What should be considered
- **Key resource:** Web resources to search outbreaks
- **Interactive lesson:** Suspicion of high consequence pathogen

2. Febrile illness in returning travelers and migrants

Specific learning objective:

- *Apply the assessment recommendations in the diagnosis and therapeutic management of imported fever in returning travelers and migrants. Follow the steps of the management algorithm proposal*

Learning materials:

- **Video pill:** Four challenges when managing fever in returning travelers and migrants [José Muñoz]
- **Lecture notes:** Febrile illnesses in returning travelers and migrants
- **Video pill:** The Effort study. Understanding the causes of fever in returning travelers [Daniel Camprubí Ferrer]
- **Quick article review:** Spanish consensus on imported febrile illness
- **Interactive lesson:** The basics of imported fever management
- **Interactive lesson:** A clinical case to learn the imported fever management
- Further cases:
  - **Interactive case:** Celine's case
  - **Interactive case:** The volunteers' case (I) – José
  - **Interactive case:** The volunteers' case (II) – Friends in the lake

3. Management of malaria in non-endemic settings

Specific learning objective:

- *Apply the diagnostic and therapeutic recommendations of imported malaria in returning travelers and migrants, and recognize the current limitations and challenges*

Learning materials:

- **Video pill:** Introduction to imported malaria [Leire Balerdi]
- **Lecture notes:** Management of imported malaria
- **Video pill:** Malaria Rapid Diagnostic Tests [Leire Balerdi]
- **Video lesson #2 (recording):** Challenges in malaria management
- **Interactive lesson:** Management of imported malaria
- **Quick article review:** SEQUAMAT & AQUAMAT studies

4. Imported arboviral infections and autochthonous transmission

Specific learning objectives:

- *Identify a suspicion of imported arboviral infection according to epidemiological and clinical issues and discuss the diagnostic and therapeutic management, including new diagnostic tools*
- *Discuss the general features of arboviruses with capability of transmission in Europe, from endemic ones to introduced ones*

Learning materials:

- **Lecture notes:** Management of imported arboviral infections
- **Interactive lesson:** Dengue, Zika, and Chikungunya as the main imported arboviroses
- **Key resource:** Patterson J, Sammon M, Garg M. Dengue, Zika and Chikungunya: Emerging Arboviruses in the New World. West J Emerg Med. 2016 Nov;17(6):671-679. doi: 10.5811/westjem.2016.9.30904. PMID: 27833670.
- **Interactive lesson:** Cases to learn the management of imported arboviral infections
- **Video lesson #3 (recording):** Dengue on the move: clinical & vaccine insights

5. Management of travel-related bacterial infections

Specific learning objective:

- *Discuss common aspects of imported Doxycycline Responding Illness and diagnostic and therapeutic management, particularly the rickettsial infections and leptospirosis*

Learning materials:

- **Key resource:** Main Doxycycline Responding Illnesses
- **Video:** Effort study. The role of DRI in returning travelers [Daniel Camprubí Ferrer]
- **Interactive lesson:** Imported bacterial fever: DRI's relevance
- **Key resource:** Basnyat B, Qamar FN, Rupali P, Ahmed T, Parry CM. Enteric fever. BMJ 2021;372:n437. doi: 10.1136/bmj.n437
- **Interactive lesson:** Imported bacterial fever: Enteric fever

6. Management of traveler's diarrhea

Specific learning objectives:

- *Discuss diagnostic and therapeutic management on traveler's diarrhea, including follow-up*

- *Identify and apply diagnostic and therapeutic management of enteric bacterial fever of returning travelers*

Learning materials:

- **Lecture notes:** Management of traveler's diarrhea
- **Interactive lesson:** Management of traveler's diarrhea
- Further cases to check your knowledge

7. Imported skin lesions

Specific learning objectives:

- *Discuss the differential diagnosis on imported dermatological lesions*
- *Discuss the diagnostic and therapeutic management of the main cutaneous lesions in returning travelers*

Learning materials:

- **Key resource:** Differential diagnosis of imported skin lesions
- **Interactive lesson:** Syndromic approach for imported skin lesions
- **Key resource:** Main imported skin lesions (fact sheets)
- **Video lesson #4 (recording):** Skin lesions and NTDs in travelers: diagnosing through observation
- **Quiz 1:** Can you identify these dermatological lesions?
- **Quiz 2:** Can you identify these dermatological lesions?

8. Management of imported eosinophilia

Specific learning objective:

- *Recognize the main infectious causes of imported eosinophilia and discuss the diagnostic and therapeutic recommendations*

Learning materials:

- **Video pill:** What does eosinophilia mean? [Alex Almuedo]
- **Lecture notes:** Management of imported eosinophilia
- **Interactive lesson:** Management of imported eosinophilia
- **Video pill:** Challenges on the management of imported eosinophilia

9. Imported pulmonary mycoses

Specific learning objective:

- *Recognize the main etiologies of endemic pulmonary mycoses and discuss the diagnostic and therapeutic management, focusing on histoplasmosis*

Learning materials:

- **Key resource:** Histoplasmosis: diagnostic methods and clinical classification. From Azar et al. (2020)
- **Interactive lesson:** Endemic pulmonary mycoses
- **Key resource:** Mazi PB, et al. Management of Histoplasmosis by Infectious Disease Physicians. Open Forum Infect Dis. 2022 Jun 24;9(7):ofac313. doi: 10.1093/ofid/ofac313

10. Imported neurological diseases

Specific learning objective:

- *Discuss the differential diagnosis of imported neurological syndromes and its clinical management, focusing on lymphocytic meningitis*

Learning materials:

- **Key resource:** Kenfak A, Eperon G, Schibler M, Lamoth F, Vargas MI, Stahl JP. Diagnostic approach to encephalitis and meningoencephalitis in adult returning travellers. Clin Microbiol Infect. 2019
- **Interactive lesson:** A general approach to imported neurological disease

11. Management of imported liver parasites

Specific learning objectives:

- *Identify the main human liver parasites and discuss the diagnostic and therapeutic recommendations of the main liver parasites (Echinococcus, liver flukes and Entamoeba histolytica)*
- *Identify the particularities of Neglected Tropical Diseases in non-endemic countries*

Learning materials:

- **Key resource:** Main liver parasites
- **Key resource:** Echinococcosis. Treatment recommendations by stage
- **Key resource:** Meeting of the WHO Informal Working Group on Echinococcosis (WHO-IWGE), Geneva, Switzerland, 15–16 December 2016. Geneva: World Health Organization; 2017 (WHO/HTM/NTD/NZD/2017.01).
- **Interactive lesson:** Management of imported liver parasites
- **Expert video:** Gray areas on the therapeutic management of echinococcosis [Leire Balerdi]
- **Forum discussion:** Management of imported liver parasites

12. Clinical cases in tropical medicine

Specific learning objective:

- *Discuss real clinical cases to reinforce knowledge and enhance awareness of clinical management in tropical medicine*

Learning materials:

- **Video lesson #5 (recording):** Practical case scenarios

Additional resources

1. Wu et al. Evaluation of the sick returned traveler. 2019.
2. Haggman et al. Travel-related leptospirosis: a series of 15 imported cases. 2014.
3. Van de Werve et al. Travel-related leptospirosis in Israel: a nationwide study. 2013.
4. Alonso et al. Imported acute histoplasmosis with rheumatologic manifestations in Spanish travelers. 2009.
5. Leder et al. GeoSentinel surveillance of illness in returned travelers, 2007-2011. 2013.
6. Camprubí-Ferrer et al. Causes of imported fever in returning travelers: a European multicenter prospective cohort study. 2022.
7. Johnston et al. Fever in returned travellers presenting in the United Kingdom: recommendations for investigation and initial management. 2009.
8. Bottieau et al. Etiology and outcome of fever after a stay in the tropics. 2009.
9. Bell. Fever in the returning traveler. 2012.
10. Thwaites et al. Approach to fever in the returning travelers. 2017.
11. D'Acremont et al. Practice guidelines for evaluation of fever in returning travelers and migrants. 2006.
12. Bottieau et al. Fever after a stay in the tropics. 2007.
13. Aetiology of fever in returning travelers and migrants: a systematic review and meta-analysis.
14. Rubio E, et al. Diagnostic value of platelet and leukocyte counts in the differential diagnosis of fever in the returning traveler. 2019.
15. Gómez-Pérez G, et al. Controlled human malaria infection by intramuscular and direct venous inoculation of cryopreserved Plasmodium falciparum sporozoites in malaria-naïve volunteers: effect of injection volume and dose on infectivity rates. 2015. https://doi.org/10.1186/s12936-015-0817-x
16. Camprubí-Ferrer D, Díaz Menendez M, Crespillo-Andújar C, Galparsoro HA, Belhassen-Garcia M, Cuadros González J, Rubio JM, Llenas García J, Oteo JA, Gayoso Martín S, Santos Larrégola L, Salvador F, Rojo-Marcos G, Balerdi-Sarasola L, Kortajarena Urkola X, Soriano Pérez MJ, Onieva-García MÁ, Alegría Coll I, Arranz J, Membrillo de Novales J. Executive Summary of the Spanish Guidelines for the Diagnosis and Management of Imported Febrile Illnesses from the Spanish Society of Tropical Medicine and International Health (SEMTSI), the Imported Pathology Group of the Spanish Society of Infectious Diseases and Clinical Microbiology (GEPI-SEIMC), the Spanish Society of Family and Community Medicine (SEMFYC), the Spanish Society of Primary Care Physicians (SEMERGEN) and the Spanish Society of Emergency Medicine (SEMES). Enferm Infecc Microbiol Clin (Engl Ed). 2024 Aug-Sep;42(7):380-385. doi: 10.1016/j.eimce.2024.05.011. Epub 2024 Jul 3. PMID: 38965027.
17. Mischlinger J, et al. Imported malaria in countries where malaria is not endemic: a comparison of semi-immune and nonimmune travelers. Clin Microbiol Rev. 2020. https://doi.org/10.1128/CMR.00104-19
18. Eschar-associated rickettsiosis (National Center for Emerging and Zoonotic Infectious Diseases/CDC): Fact sheet.
19. Leptospirosis. Fact sheet for clinicians.
20. Lyme disease. Several resources for healthcare providers.
21. Abdad MY, et al. A concise review of the epidemiology and diagnostics of rickettsioses: Rickettsia and Orientia spp. 2018.
22. Tickborne Diseases of the United States. A Reference Manual for Healthcare Providers. Sixth Edition. U.S. CDC (2022).
23. Rickettsial disease diagnostic testing and interpretation for healthcare providers (CDC): Fact sheet.
24. Patterson J, et al. Dengue, Zika and Chikungunya: Emerging arboviruses in the new world. West J Emerg Med. 2016. doi: 10.5811/westjem.2016.9.30904
25. Guzman M, et al. Dengue. The Lancet. 2014. doi: 10.1016/S0140-6736(14)60572-9
26. Zika Virus 101 – CDC. https://www.cdc.gov/zika/comm-resources/zika101slides.pptx
27. Chikungunya. Atypical and severe manifestations. CDC. https://www.cdc.gov/chikungunya/pdfs/Chikungunya-atypical-severe-disease_Healthcare-provider-factsheet-10-07-2014.pdf

28. Chikungunya. Clinical management in dengue endemic areas. CDC. https://www.cdc.gov/chikungunya/pdfs/CHIKV_DengueEndemic.pdf
29. Riddle MS, et al. Guidelines for the prevention and treatment of travelers' diarrhea: a graded expert panel report. J Travel Med. 2017;24(suppl_1):S57-S74. doi: 10.1093/jtm/tax026
30. Leung AKC, et al. Travelers' diarrhea: a clinical review. Recent Pat Inflamm Allergy Drug Discov. 2019;13(1):38-48. doi: 10.2174/1872213X13666190514105054
31. Hagmann SHF, et al. Travel-associated disease among US residents visiting US GeoSentinel clinics after return from international travel. Fam Pract. 2014;31(6):678-87. doi: 10.1093/fampra/cmu063
32. Angelo KM, et al. What proportion of international travellers acquire a travel-related illness? A review of the literature. J Travel Med. 2017;24(5). doi: 10.1093/jtm/tax046
33. Adler VA, et al. What's new in travellers' diarrhoea: updates on epidemiology, diagnostics, treatment and long-term consequences. J Travel Med. 2022;29(1):taab099. https://doi.org/10.1093/jtm/taab099
34. O'Brien BM. A practical approach to common skin problems in returning travellers. Travel Med Infect Dis. 2009 May;7(3):125-46. doi: 10.1016/j.tmaid.2009.03.003.
35. Akhoundi M, et al. Who bites me? A tentative discriminative key to diagnose hematophagous ectoparasites biting using clinical manifestations. Diagnostics (Basel). 2020;10(5):308. doi: 10.3390/diagnostics10050308.
36. Korzeniewski K, et al. Skin lesions in returning travellers. Int Marit Health. 2015.
37. Aronson N, et al. Diagnosis and treatment of leishmaniasis: Clinical practice guidelines by the IDSA and ASTMH. Clin Infect Dis. 2016;63(12):e202-e264. doi: 10.1093/cid/ciw670. PMID: 27941151.
38. Herness J. Arthropod bites and stings. Am Fam Physician. 2022;106(2):137-147.
39. Anoka IA, Robb EL, Baker MB. Brown recluse spider toxicity. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2022.
40. Kruse B, Anderson J, Simon LV. Fire ant bites. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2022. PMID: 29261949.
41. Isbister GK, Fan HW. Spider bite. Lancet. 2011;378(9808):2039-2047. doi: 10.1016/S0140-6736(10)62230-1.
42. Toxinology.com
43. Fire ant stings, by Australia's largest biosecurity eradication initiative.
44. Salas-Coronas J, et al. Diagnóstico y tratamiento de la eosinofilia importada en viajeros e inmigrantes: recomendaciones de la Sociedad Española de Medicina Tropical y Salud Internacional (SEMTSI). Rev Esp Quimioter. 2017;30(1):62-78.
45. Butt NM, et al. Guideline for the investigation and management of eosinophilia. Br J Haematol. 2017;176(4):553-572. doi: 10.1111/bjh.14488.
46. Checkley AM, et al. Eosinophilia in returning travellers and migrants from the tropics: UK recommendations for investigation and initial management. J Infect. 2010;60(1):1-20. doi: 10.1016/j.jinf.2009.11.003. PMID: 19931558.
47. Cañas García-Otero E, et al. Aproximación clínica a la eosinofilia importada. Enferm Infecc Microbiol Clin. 2016;34(10):661–684.
48. Mejia R, Nutman TB. Evaluation and differential diagnosis of marked, persistent eosinophilia. Semin Hematol. 2012;49(2):149-59. doi: 10.1053/j.seminhematol.2012.01.006.
49. Ehrhardt S, Burchard GD. Eosinophilia in returning travelers and migrants. Dtsch Arztebl Int. 2008;105(46):801-7. doi: 10.3238/arztebl.2008.0801.
50. O'Connell EM, Nutman TB. Eosinophilia in infectious diseases. Immunol Allergy Clin North Am. 2015;35(3):493-522. doi: 10.1016/j.iac.2015.05.003. PMID: 26209897.
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53. Ashraf N, et al. Re-drawing the maps for endemic mycoses. Mycopathologia. 2020;185(5):843-865. doi: 10.1007/s11046-020-00431-2.
54. Histoplasmosis for healthcare professionals. CDC.

55. Wen H, et al. Echinococcosis: advances in the 21st century. Clin Microbiol Rev. 2019;32(2):e00075-18. doi: 10.1128/CMR.00075-18.

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58. Shirley DT, Farr L, Watanabe K, Moonah S. A review of the global burden, new diagnostics, and current therapeutics for amebiasis. Open Forum Infect Dis. 2018;5(7):ofy161. doi: 10.1093/ofid/ofy161

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This course has scientific endorsement of SEIMC and SEMTSI:

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