its features in culture were atypical (3). In 2015, Sigler determined that this isolate belonged to a new Emmonsia-like species, which she described as E. helica (3). Another fatal case of Emmonsia infection was reported from California in a patient after an orthotopic liver transplant (4). An isolate from that patient was also confirmed as E. helica (I. Schwartz et al., unpub. data).

Although the travel history for the second case-patient was not reported (4) and the patient in this report had resided in Mexico, these cases suggest that the area of endemicity of E. helica may include California. This finding is further supported by 2 other fatal cases of atypical mycoses reported in HIV-infected men from California (5); histopathologic findings of hyphae and multiple budding yeasts were consistent with E. helica (I. Schwartz et al., unpub. data). Investigations are under way to characterize the geographic and host range of E. helica and to clarify the phylogenetic relationships among members of the family Ajellomycetaceae comprising the genera Emmonsia, Blastomyces, Histoplasma and others because recent studies have uncovered far greater complexity than previously supposed (1,6).

Acknowledgments

We thank Valerie Ng, Nancy Li, Ken Schneider, Louise Troung, and Sudharshan Parthasarathy for the radiographic and histopathologic images used in the Figure. We also thank James Scott for his assistance with the case.

About the Author

Dr. Rofael is a third-year internal medicine resident at Alameda County Medical Center in Oakland, California. His research interests include pulmonary medicine, critical care, infectious diseases, and global medicine in resource-poor settings.

References

1. Schwartz IS, Kenyon C, Feng P, Govender NP, Dukik K, Sigler L, et al. 50 Years of Emmonsia disease in humans: the dramatic emergence of a cluster of novel fungal pathogens. PLoS Pathog. 2015;11:e1005198. http://dx.doi.org/10.1371/journal.ppat.1005198
2. Sigler L. Emmonsia helica Sigler sp. nov. Index Fungorum 2015: 237 [cited 2017 Oct 26]. http://www.indexfungorum.org/Publications/Index%20fungorum%20no.237.pdf
3. Sekhon AS, Jackson FL, Jacobs HJ. Blastomycosis: report of the first case from Alberta, Canada. Mycopathologia. 1982;79:65–9. http://dx.doi.org/10.1007/BF00468081
4. Kappagoda S, Adams JY, Luo R, Banaei N, Concepcion W, Ho D Y. Fatal Emmonsia sp. infection and fungemia after orthotopic liver transplantation. Emerg Infect Dis. 2017;23:346–9. http://dx.doi.org/10.3201/eid2302.160799
5. Tan G, Kaufman L, Peterson EM, de la Maza LM. Disseminated atypical blastomycosis in two patients with AIDS. Clin Infect Dis. 1993;16:107–11. http://dx.doi.org/10.1093/clinids/16.1.107
6. Dukik K, Muńoz JF, Jiang Y, Feng P, Sigler L, Stielow JB, et al. Novel taxa of thermally dimorphic systemic pathogens in the Ajellomycetaceae (Onygenales). Mycoses. 2017;60:296–309. http://dx.doi.org/10.1111/myc.12601

Address for correspondence: Martin Rofael, Alameda County Medical Center—Internal Medicine, 1411 E 31st St., A2 QIC 22130, Oakland, CA, 94602-1018 USA; email: mrofael@gmail.com

Costs of Conjunctivitis Outbreak, Réunion Island, France

Laurent Filleul, Frederic Pagès, Guy-Noel Chan Wan, Elise Brottet, Pascal Vilain

Author affiliations: Santé Publique France, French National Public Health Agency, Saint-Denis, Réunion, France (L. Filleul, F. Pagès, E. Brottet, P. Vilain); Agence Régionale de Santé Océan Indien, Regional Public Health Authority, Saint-Denis (G.-N.C. Wan)

DOI: https://doi.org/10.3201/eid2401.170916

During January–April 2015, a major outbreak of conjunctivitis on Réunion Island caused a large public health impact. On the basis of general practitioner consultations, emergency department visits, and eye medication sales during the 13-week epidemic, we estimated a total healthcare cost of €3,341,191 from the outbreak.

During January–April 2015, a major outbreak of acute hemorrhagic conjunctivitis occurred on Réunion Island, a French overseas administrated territory, is located in the Indian Ocean between Madagascar and Mauritius; it has a surface area of 2,512 km² and a population of ≈840,000 (1.3% of France’s population, including the nation’s overseas territories; https://www.insee.fr/fr/statistiques/2119468).

The island is included in the national health insurance (NHI) program of France. Réunion Island’s health system is similar to that of France; however, most patients on the island do not pay provider health fees directly. NHI pays the general practitioner (GP), the pharmacist, or hospital. Rarely, the patients pay for the GP consultations and emergency department (ED) visits, but these costs will be refunded to the patients by the NHI. Healthcare costs are higher (≈30%) on the island than in mainland France. In 2015, total healthcare expenditures in Réunion Island were
Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 24, No. 1, January 2018

Epidemiologic week | No. eye drop sales | No. GP consultations for conjunctivitis | No. ED visits for conjunctivitis | Total cost of eye drop sales, € | Total cost of GP consultations, € | Total cost of ED visits, €
---|---|---|---|---|---|---
5 | 7,126 | 2,641 | 19 | 21,206 | 72,887 | 999
6 | 6,818 | 1,937 | 9 | 20,198 | 53,453 | 473
7 | 10,379 | 3,537 | 17 | 31,199 | 97,617 | 894
8 | 14,079 | 7,439 | 17 | 42,646 | 205,326 | 894
9 | 25,831 | 13,845 | 33 | 78,083 | 382,108 | 1,736
10 | 27,345 | 20,895 | 41 | 82,198 | 576,711 | 2,157
11 | 31,866 | 20,648 | 21 | 101,453 | 569,892 | 1,105
12 | 15,339 | 9,141 | 15 | 46,990 | 252,279 | 789
13 | 14,726 | 6,954 | 17 | 43,034 | 191,921 | 894
14 | 11,049 | 4,832 | 13 | 32,717 | 133,371 | 684
15 | 8,186 | 3,369 | 17 | 24,166 | 92,977 | 894
16 | 8,109 | 2,593 | 9 | 24,040 | 71,574 | 473
17 | 6,279 | 2,264 | 3 | 18,514 | 62,479 | 158
Total by category | 187,126 | 100,094 | 231 | 566,443 | 2,762,597 | 12,151
Total costs | 3,341,191

ED, emergency department; GP, general practitioners.

On January 26, 2015, when an unusual cluster of conjunctivitis cases in the western part of the island were detected, we conducted an ongoing epidemiologic situation and available preventive measures. Health authorities also published a press release for the general public.

On the basis of these data and the major impact for public health, we estimated the cost of this outbreak. We compiled the cost of different indicators: GP consultations, ED visits, and eye medication sales. On Réunion Island, a GP consultation fee of €2.76 and an ED visit fee of €52.60 are reimbursed by NHI. For medicated eye drop sales, we extracted data (number of sales by week and cost) from France’s NHI information system, SNIIR-AM (4). During the outbreak period, 187,126 medicated eye drop kits were purchased and reimbursed, at a total cost of €566,443. For activity related to conjunctivitis, the cost for GP consultations was €2,762,597 and for ED visits was €12,151 (Table). During weeks 5–17, the healthcare cost was estimated at €3,341,191. The total cost is underestimated, however, because it did not include costs to individuals and businesses, including sick leave, work absenteeism of parents for sick children, and some persons who had conjunctivitis but did not consult a physician.

These data demonstrate that acute outbreaks of illness caused by nonfatal agents can have substantive public health and economic impact. In France, where medical costs are reimbursed by the state, an outbreak of this magnitude, even if virulence is negligible, should be examined thoroughly. Information for the public and health professionals should be strengthened by recurring prevention campaigns with a focus on hygiene, such as washing hands frequently; avoiding rubbing the eyes; covering one’s mouth and nose when coughing or sneezing; and avoiding sharing linen, towels, or any objects owned by affected persons.

Acknowledgments
We acknowledge the sentinel general practitioners of Réunion, the emergency departments of Réunion, and the supplier of pharmacies CERP Réunion SAS.
Dengue Fever in Burkina Faso in 2016. Of 35 serum samples tested by a triplex test, 19 were confirmed dengue virus (DENV)–positive: 11 DENV-2, 6 DENV-3, 2 nontypeable, and 1 DENV-2/DENV-3 co-infection. Molecular testing should be conducted to correctly identify causative agents in this complex infectious disease landscape.